

## APPENDIX A ANNEXES G-2 – G-

**G-2:** Geological Investigations South of the Redline

**G-3:** Geological Investigations – Green, Blue and Yellow Lines

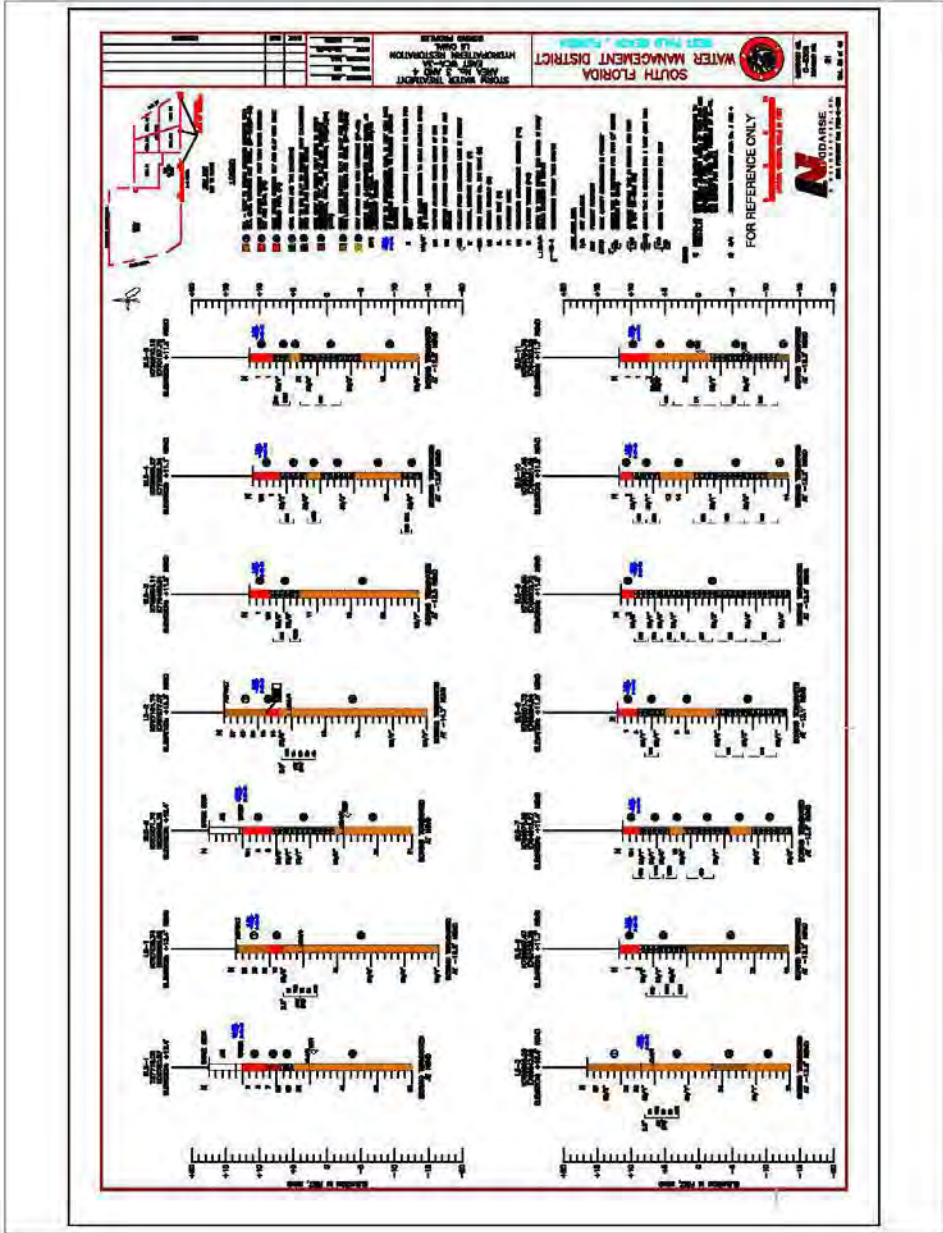
Please refer to the pdf bookmarks for  
direct access to each annex

## ANNEX G-2. GEOLOGICAL INVESTIGATIONS SOUTH OF THE REDLINE





Figure G-2-1. Nodarse and Associates, 2000 Boring Map







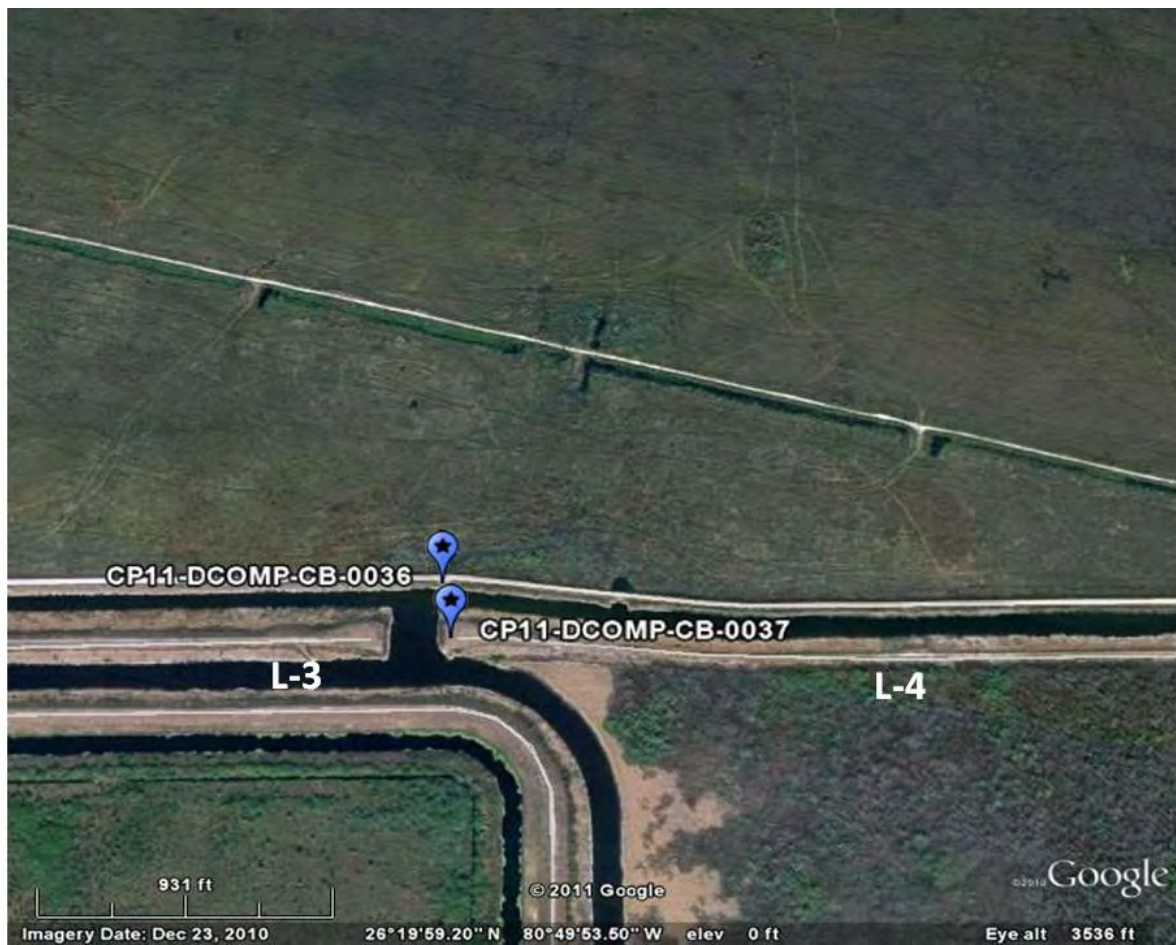



Figure G-2-2. U.S. Army Corps of Engineers 2011 Boring Map



| DRILLING LOG  |       | DIVISION<br>South Atlantic                      |   | INSTALLATION<br>Jacksonville District                                 |                     | SHEET 1<br>OF 2 SHEETS  |  |                   |         |
|---|-------|---|---|---|---------------------|---|--|-------------------|---------|
| 1. PROJECT<br>C&SF CERP WCA 3 DECOMP Part 2<br>L-4 North, Proposed Pump Station                             |       |   |   | 9. SIZE AND TYPE OF BIT See Remarks                                   |                     |   |  |                   |         |
| 2. BORING DESIGNATION<br>CP11-DCOMP-CB-0036   |       | LOCATION COORDINATES<br>X = 710,800 Y = 726,372 |   | 10. COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. Ft.)            |                     | HORIZONTAL<br>NAD83<br>VERTICAL<br>NAVD88   |  |                   |         |
| 3. DRILLING AGENCY<br>Corps of Engineers - CESAM  |       | CONTRACTOR FILE NO.                             |   | 11. MANUFACTURER'S DESIGNATION OF DRILL<br>Falling 1500               |                     | <input type="checkbox"/> AUTO HAMMER<br><input checked="" type="checkbox"/> MANUAL HAMMER |  |                   |         |
| 4. NAME OF DRILLER<br>Charlie Brown   |       |   |   | 12. TOTAL SAMPLES<br>1  |                     | DISTURBED<br>0<br>UNDISTURBED (U0)  |  |                   |         |
| 5. DIRECTION OF BORING<br><input checked="" type="checkbox"/> VERTICAL<br><input type="checkbox"/> INCLINED |       | DEG. FROM<br>VERTICAL                           |   | 13. TOTAL NUMBER CORE BOXES<br>1                                      |                     | 14. ELEVATION GROUND WATER<br>9.0 Ft.   |  |                   |         |
| 6. THICKNESS OF OVERBURDEN<br>N/A   |       | BEARING   |   | 15. DATE BORING<br>03-15-11   |                     | STARTED<br>03-15-11<br>COMPLETED  |  |                   |         |
| 7. DEPTH DRILLED INTO ROCK<br>N/A   |       |   |   | 16. ELEVATION TOP OF BORING<br>16.6 Ft.                               |                     | 17. TOTAL RECOVERY FOR BORING<br>69 %   |  |                   |         |
| 8. TOTAL DEPTH OF BORING<br>22.7 Ft.  |       |   |   | 18. SIGNATURE AND TITLE OF INSPECTOR<br>Michael Fitzharris, Geologist |                     |   |  |                   |         |
| ELEV.   | DEPTH | LEGEND  | CLASSIFICATION OF MATERIALS   | %<br>REC.   | BOX<br>OR<br>SAMPLE | RCD<br>OR<br>UD   | REMARKS  | BLOWS/<br>0.5 FT. | N-VALUE |
| 16.6  | 0.0   |   | FILL, fine grained sand with some fine and coarse grained gravel; trace clay, 2.5YR 6/2 pale red                        | 73  |                     |   | 16.6   | 8                 | 0       |
|   |       |   |   |   |                     |   | SPT Sampler  | 15                | 31      |
|   |       |   |   | 60  |                     |   | 15.1   | 4                 |         |
|   |       |   |   |   |                     |   | SPT Sampler  | 7                 | 16      |
| 13.6  | 3.0   |   | SAND, clayey, some fine gravel; trace silt, 5Y 4/1 dark gray (SC)   | 80  |                     |   | 13.6   | 9                 |         |
|   |       |   |   |   |                     |   | SPT Sampler  | 5                 | 8       |
|   |       |   |   |   |                     |   | 12.1   | 3                 | 5       |
|   |       |   |   | 73  |                     |   | SPT Sampler  | 3                 | 8       |
| 10.6  | 6.0   |   | CLAY, organic-L, moist, organic soil with calcareous sand and gravel particles, 5Y 2.5/1 black (OL)                     | 87  |                     |   | 10.6   | 5                 |         |
|   |       |   |   |   |                     |   | SPT Sampler  | 2                 | 2       |
| 9.1   | 7.5   |   | SAND, clayey, moist, calcareous sand and gravel fragments, 7.5YR 2.5/1 black (SC)                                       | 63  |                     |   | 9.1  | 1                 | 2       |
|   |       |   |   |   |                     |   | SPT Sampler  | WOH               |         |
|   |       |   |   |   |                     |   | 7.6  | 1                 | 2       |
| 7.1   | 9.5   |   | CLAY, lean, moist, some calcareous gravel; little organics, 10YR 4/1 dark gray (CL)                                     | 93  |                     |   |  | 2                 |         |
|   |       |   |   |   |                     |   | SPT Sampler  | 1                 | 5       |
| 6.1   | 10.5  |   | SAND, clayey, trace gravel, trace silt, 2.5Y 6/1 gray (SC)  | 87  |                     |   | 6.1  | 4                 | 10      |
|   |       |   |   |   |                     |   | SPT Sampler  | 2                 |         |
|   |       |   |   |   |                     |   | 4.6  | 2                 | 6       |
| 4.6   | 12.0  |   | SAND, silty, some coarse gravel, 2.5Y 6/1 gray (SM)   | 40  |                     |   |  | 4                 |         |
|   |       |   |   |   |                     |   | SPT Sampler  | 2                 | 20      |
| 3.1   | 13.5  |   | LIMESTONE, fossiliferous, weathered, moderately fractured, vuggy, glauconitic staining; some clay infills, 5Y 8/1 white | 85  | BOX                 | RCD   | 4 x 5-1/2"<br>DT = 9 mins<br>HP = 200 psi<br>DFR = 100 % | 16                | 15      |
|   |       |   |   | 1   | 32                  |   |  |                   |         |

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| DRILLING LOG (Cont. Sheet)                      |       |  | INSTALLATION<br>Jacksonville District                  |           | SHEET 2<br>OF 2 SHEETS |                       |   |                   |         |
|---|-------|--|--|-----------|------------------------|-----------------------|---|-------------------|---------|
| PROJECT<br>C&SF CERP WCA 3 DECOMP Part 2        |       |  | COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. Ft.) |           | HORIZONTAL<br>NAD83    | VERTICAL<br>NAVD88    |   |                   |         |
| LOCATION COORDINATES<br>X = 710,800 Y = 726,372 |       |  | ELEVATION TOP OF BORING<br>16.6 Ft.                    |           |                        |                       |   |                   |         |
| ELEV.   | DEPTH | LEGEND   | CLASSIFICATION OF MATERIALS                            | %<br>REC. | BOX<br>OR<br>SAMPLE    | ROD<br>OR<br>UP       | REMARKS   | BLOWS/<br>0.3 FT. | N-VALUE |
| -6.1  | 22.7  |   |  | 65        |                        | ROD<br>32             | 4 x 5-1/2"<br>DT = 9 mins<br>HP = 200 psi<br>DFR = 100 %  |                   |         |
|   |       |  |  |           |                        |                       | -0.3  |                   |         |
|   |       |  |  | 40        | 1                      | BOX<br>1<br>ROD<br>11 | 4 x 5-1/2"<br>DT = 5 mins<br>HP = 200 psi<br>DFR = 70 %   |                   |         |
|   |       |  |  |           |                        |                       | -6.1  |                   |         |
|   |       | NOTES:<br>1. USACE Jacksonville is the custodian for these original files.<br>2. Soils are field visually classified in accordance with the Unified Soils Classification System.<br>3. Grout |  |           |                        |                       | 140# hammer w/30" drop used with 2.0' split spoon (1-3/8" I.D. x 2" O.D.)<br><br>Abbreviations:<br>WOH = Weight of Hammer.<br>DT = Drill Time.<br>HP = Hydraulic Pressure.<br>DFR = Drill Fluid Return. |                   |         |

| DRILLING LOG  |       | DIVISION<br>South Atlantic                      |   | INSTALLATION<br>Jacksonville District                                 |                     | SHEET 1<br>OF 2 SHEETS  |         |                   |         |
|---|-------|---|---|---|---------------------|---|---------|-------------------|---------|
| 1. PROJECT<br>C&SF CERP WCA 3 DECOMP Part 2<br>L-4 South, Proposed Pump Station Alternate                   |       |   |   | 9. SIZE AND TYPE OF BIT See Remarks                                   |                     |   |         |                   |         |
| 2. BORING DESIGNATION<br>CP11-DCOMP-CB-0037   |       | LOCATION COORDINATES<br>X = 710,839 Y = 726,167 |   | 10. COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. Ft.)            |                     | HORIZONTAL<br>NAD83<br>VERTICAL<br>NAVD88   |         |                   |         |
| 3. DRILLING AGENCY<br>Corps of Engineers - CESAM  |       | CONTRACTOR FILE NO.                             |   | 11. MANUFACTURER'S DESIGNATION OF DRILL<br>Falling 1500               |                     | <input type="checkbox"/> AUTO HAMMER<br><input checked="" type="checkbox"/> MANUAL HAMMER |         |                   |         |
| 4. NAME OF DRILLER<br>Charlie Brown   |       |   |   | 12. TOTAL SAMPLES<br>1  |                     | DISTURBED<br>0<br>UNDISTURBED (U0)  |         |                   |         |
| 5. DIRECTION OF BORING<br><input checked="" type="checkbox"/> VERTICAL<br><input type="checkbox"/> INCLINED |       | DEG. FROM<br>VERTICAL                           |   | 13. TOTAL NUMBER CORE BOXES<br>1                                      |                     | 14. ELEVATION GROUND WATER<br>8.3 Ft.   |         |                   |         |
| 6. THICKNESS OF OVERBURDEN<br>N/A   |       | BEARING   |   | 15. DATE BORING<br>03-22-11   |                     | STARTED<br>03-22-11<br>COMPLETED<br>03-22-11  |         |                   |         |
| 7. DEPTH DRILLED INTO ROCK<br>N/A   |       |   |   | 16. ELEVATION TOP OF BORING<br>20.0 Ft.                               |                     | 17. TOTAL RECOVERY FOR BORING<br>61 %   |         |                   |         |
| 8. TOTAL DEPTH OF BORING<br>20.7 Ft.  |       |   |   | 18. SIGNATURE AND TITLE OF INSPECTOR<br>Michael Fitzharris, Geologist |                     |   |         |                   |         |
| ELEV.   | DEPTH | LEGEND  | CLASSIFICATION OF MATERIALS   | %<br>REC.   | BOX<br>OR<br>SAMPLE | RQD<br>OR<br>UD   | REMARKS | BLOWS/<br>0.5 FT. | N-VALUE |
| 20.0  | 0.0   |   | FILL, gravelly, trace organics; trace clay;<br>trace roots; some shell fragments,<br>5YR 7/1 light gray | 87  |                     |   | 20.0    | 10                | 0       |
|   |       |   | From El. 18.5 to 14.0 Ft., sandy, trace<br>organics; trace shell fragments,<br>7.5YR 4/1 dark gray      | 53  |                     |   | 18.5    | 24                | 40      |
|   |       |   |   |   |                     |   |         | 16                |         |
|   |       |   |   |   |                     |   |         | 4                 |         |
|   |       |   |   |   |                     |   |         | 6                 | 14      |
|   |       |   |   |   |                     |   |         | 8                 |         |
|   |       |   |   |   |                     |   |         | 9                 |         |
|   |       |   |   |   |                     |   |         | 10                | 23      |
|   |       |   |   |   |                     |   |         | 13                |         |
|   |       |   |   |   |                     |   |         | 11                | 5       |
|   |       |   |   |   |                     |   |         | 15                | 36      |
|   |       |   |   |   |                     |   |         | 21                |         |
|   |       |   |   |   |                     |   |         | 13                |         |
|   |       |   |   |   |                     |   |         | 10                | 22      |
|   |       |   |   |   |                     |   |         | 12                |         |
|   |       |   |   |   |                     |   |         | 5                 |         |
|   |       |   |   |   |                     |   |         | 6                 | 12      |
|   |       |   |   |   |                     |   |         | 6                 |         |
|   |       |   |   |   |                     |   |         | 9                 |         |
|   |       |   |   |   |                     |   |         | 2                 | 4       |
|   |       |   |   |   |                     |   |         | 2                 |         |
|   |       |   |   |   |                     |   |         | 1                 |         |
|   |       |   |   |   |                     |   |         | 2                 | 4       |
|   |       |   |   |   |                     |   |         | 2                 |         |
|   |       |   |   |   |                     |   |         | woh               |         |
|   |       |   |   |   |                     |   |         | woh               | 0       |
|   |       |   |   |   |                     |   |         | woh               |         |
|   |       |   |   |   |                     |   |         | 2                 |         |
|   |       |   |   |   |                     |   |         | 7                 | 14      |
|   |       |   |   |   |                     |   |         | 7                 |         |

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| DRILLING LOG (Cont. Sheet)   |       |        | INSTALLATION<br>Jacksonville District  |           | SHEET 3<br>OF 2 SHEETS |                    |  |                        |         |
|--|-------|--------|--|-----------|------------------------|--------------------|--|------------------------|---------|
| PROJECT<br>C&SF CERP WCA 3 DECOMP Part 2   |       |        | COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. Ft.)   |           | HORIZONTAL<br>NAD83    | VERTICAL<br>NAVD88 |  |                        |         |
| LOCATION COORDINATES<br>X = 710,839 Y = 726,167  |       |        | ELEVATION TOP OF BORING<br>20.0 Ft.  |           |                        |                    |  |                        |         |
| ELEV.  | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS  | %<br>REC. | BOX<br>OR<br>SAMPLE    | ROD<br>OR<br>UP    | REMARKS  | BLOW<br>WT.<br>0.5 FT. | N-VALUE |
|  |       |        |  | 69        |                        |                    | SPT Sampler  | 1<br>4<br>50/0.3'      | 54+     |
|  |       |        |  | 0         |                        |                    | Advanced Boring  |                        |         |
| 1.9  | 18.1  |        |  |           |                        |                    | 1.9  |                        |         |
|  |       |        | LIMESTONE, moderately hard, moderately fractured, vuggy, 10YR 7/1 light gray   | 100       | BOX                    | ROD                | 4 x 5-1/2"<br>DT = 11 mins<br>HP = 200 psi<br>DFR = 90 % |                        |         |
| -0.7   | 20.7  |        |  |           | 1                      | 42                 | -0.7   |                        |         |
| NOTES:   |       |        | 140# hammer w/30" drop used with 2.0' split spoon (1-3/8" I.D. x 2" O.D.).<br>Abbreviations:<br>WOH = Weight of Hammer.<br>DT = Drill Time.<br>HP = Hydraulic Pressure.<br>DFR = Drill Fluid Return. |           |                        |                    |  |                        |         |
| 1. USACE Jacksonville is the custodian for these original files.<br>2. Soils are field visually classified in accordance with the Unified Soils Classification System.<br>3. Grout |       |        |  |           |                        |                    |  |                        |         |



Figure G-2-3. U.S. Army Corps of Engineers 2011 Boring Map

| DRILLING LOG  |       | DIVISION<br>South Atlantic                      |   | INSTALLATION<br>Jacksonville District                                 |                     | SHEET 1<br>OF 2 SHEETS  |             |                   |         |
|---|-------|---|---|---|---------------------|---|-------------|-------------------|---------|
| 1. PROJECT<br>C&SF CERP WCA 3 DECOMP Part 2<br>L-5 Canal Plug, Proposed Pump Station                        |       |   |   | 9. SIZE AND TYPE OF BIT See Remarks                                   |                     |   |             |                   |         |
| 2. BORING DESIGNATION<br>CP11-DCOMP-CB-0011   |       | LOCATION COORDINATES<br>X = 775,757 Y = 727,006 |   | 10. COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. Ft.)            |                     | HORIZONTAL<br>NAD83<br>VERTICAL<br>NAVD88   |             |                   |         |
| 3. DRILLING AGENCY<br>Corps of Engineers - CESAM  |       | CONTRACTOR FILE NO.                             |   | 11. MANUFACTURER'S DESIGNATION OF DRILL<br>Falling 1500               |                     | <input type="checkbox"/> AUTO HAMMER<br><input checked="" type="checkbox"/> MANUAL HAMMER |             |                   |         |
| 4. NAME OF DRILLER<br>Charlie Brown   |       |   |   | 12. TOTAL SAMPLES<br>0  |                     | DISTURBED<br>0<br>UNDISTURBED (U0)<br>0   |             |                   |         |
| 5. DIRECTION OF BORING<br><input checked="" type="checkbox"/> VERTICAL<br><input type="checkbox"/> INCLINED |       | DEG. FROM<br>VERTICAL                           |   | 13. TOTAL NUMBER CORE BOXES<br>1                                      |                     | 14. ELEVATION GROUND WATER<br>7.0 Ft.   |             |                   |         |
| 6. THICKNESS OF OVERBURDEN<br>N/A   |       | BEARING   |   | 15. DATE BORING<br>03-22-11   |                     | STARTED<br>03-22-11<br>COMPLETED<br>03-22-11  |             |                   |         |
| 7. DEPTH DRILLED INTO ROCK<br>N/A   |       |   |   | 16. ELEVATION TOP OF BORING<br>13.4 Ft.                               |                     | 17. TOTAL RECOVERY FOR BORING<br>55 %   |             |                   |         |
| 8. TOTAL DEPTH OF BORING<br>27.9 Ft.  |       |   |   | 18. SIGNATURE AND TITLE OF INSPECTOR<br>Michael Fitzharris, Geologist |                     |   |             |                   |         |
| ELEV.   | DEPTH | LEGEND  | CLASSIFICATION OF MATERIALS   | %<br>REC.   | BOX<br>OR<br>SAMPLE | RCD<br>OR<br>UD   | REMARKS     | BLOWS/<br>0.5 FT. | N-VALUE |
| 13.4  | 0.0   |   | FILL, sandy, some gravel; trace roots, 7.5YR 5/1 gray                               | 100   |                     |   | 13.4        | 3                 | 0       |
|   |       |   |   |   |                     |   | SPT Sampler | 50                |         |
| 11.9  | 1.5   |   | SAND, clayey, some gravel; some shell fragments, 10YR 6/1 gray (SC)                 | 80  |                     |   | 11.9        | 15                | 40      |
|   |       |   |   |   |                     |   | SPT Sampler | 23                |         |
|   |       |   |   | 100   |                     |   | 10.4        | 17                |         |
|   |       |   |   |   |                     |   | SPT Sampler | 14                |         |
|   |       |   |   | 53  |                     |   | 8.9         | 16                | 32      |
|   |       |   |   |   |                     |   | SPT Sampler | 36                |         |
|   |       |   |   | 67  |                     |   | 7.4         | 16                | 5       |
|   |       |   |   |   |                     |   | SPT Sampler | 7                 |         |
|   |       |   |   | 100   |                     |   | 5.9         | 7                 | 14      |
|   |       |   |   |   |                     |   | SPT Sampler | 6                 |         |
|   |       |   |   | 53  |                     |   | 4.4         | 8                 | 19      |
|   |       |   |   |   |                     |   | SPT Sampler | 11                |         |
|   |       |   |   |   |                     |   | SPT Sampler | 28                |         |
|   |       |   |   |   |                     |   | SPT Sampler | 24                |         |
| 2.9   | 10.5  |   | GRAVEL, silty, some shell fragments, 10YR 6/2 light brownish gray (GM)              | 47  |                     |   | 2.9         | 6                 | 30      |
|   |       |   |   |   |                     |   | SPT Sampler | 8                 |         |
| 1.4   | 12.0  |   | SAND, silty, some shell fragments, 2.5Y 7/1 light gray (SM)                         | 67  |                     |   | 1.4         | 7                 | 17      |
|   |       |   |   |   |                     |   | SPT Sampler | 10                |         |
|   |       |   |   |   |                     |   | SPT Sampler | 11                |         |
| -0.1  | 13.5  |   | GRAVEL, silty, trace clay; some organics; some shell fragments, 7.5YR 5/1 gray (GM) | 27  |                     |   | -0.1        | 5                 | 8       |
|   |       |   |   |   |                     |   | SPT Sampler | 3                 |         |
|   |       |   |   |   |                     |   | SPT Sampler | 2                 |         |
|   |       |   |   |   |                     |   | SPT Sampler | 2                 | 4       |
|   |       |   |   |   |                     |   | -1.6        | 2                 | 15      |

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| DRILLING LOG (Cont. Sheet)    |       |        |  | INSTALLATION                |                     | SHEET 2<br>OF 2 SHEETS |  |                   |         |
|-------------------------------|-------|--------|--|-----------------------------|---------------------|------------------------|--|-------------------|---------|
| PROJECT                       |       |        |  | COORDINATE SYSTEM/DATUM     |                     | HORIZONTAL             |  |                   |         |
| C&SF CERP WCA 3 DECOMP Part 2 |       |        |  | State Plane, FLE (U.S. Ft.) |                     | NAD83                  |  |                   |         |
| LOCATION COORDINATES          |       |        |  | ELEVATION TOP OF BORING     |                     |                        |  |                   |         |
| X = 775,757 Y = 727,006       |       |        |  | 13.4 Ft.                    |                     |                        |  |                   |         |
| ELEV.                         | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS  | %<br>REC.                   | BOX<br>OR<br>SAMPLE | ROD<br>OR<br>UP        | REMARKS  | BLOWS/<br>0.3 FT. | N-VALUE |
| -3.1                          | 16.5  |        |  | 7                           |                     |                        | SPT Sampler  | 1                 | 2+      |
|                               |       |        |  |                             |                     |                        | -2.6   | 1                 |         |
|                               |       |        | CLAY, organic-H, trace gravel; trace sand; some shell fragments, 2.5Y 3/1 very dark gray (OH)      | 40                          |                     |                        | SPT Sampler  | 1/0.0'            | 0       |
|                               |       |        |  |                             |                     |                        | -4.6   | woh               |         |
|                               |       |        |  |                             |                     |                        |  | woh               |         |
| -4.6                          | 18.0  |        |  |                             |                     |                        |  |                   |         |
|                               |       |        | GRAVEL, silty, some organics; some shell fragments, 2.5Y 3/3 dark olive brown (GM)                 | 33                          |                     |                        | SPT Sampler  | 1                 | 3       |
|                               |       |        |  |                             |                     |                        |  | 2                 |         |
| -5.6                          | 19.0  |        |  |                             |                     |                        |  | 1                 |         |
|                               |       |        | SAND, clayey, some gravel; some shell fragments, 2.5Y 7/3 pale yellow (SC)                         | 33                          |                     |                        | SPT Sampler  | 5                 | 20      |
|                               |       |        |  |                             |                     |                        |  | 9                 | 21      |
|                               |       |        |  |                             |                     |                        | -7.6   | 12                |         |
| -7.6                          | 21.0  |        |  |                             |                     |                        |  | 4                 |         |
|                               |       |        | SAND, silty, some shell fragments; trace clay, 5Y 8/1 white (SM)                                   | 20                          |                     |                        | SPT Sampler  | 6                 | 9       |
|                               |       |        |  |                             |                     |                        |  | 3                 |         |
|                               |       |        |  |                             |                     |                        | -9.1   |                   |         |
| -10.0                         | 23.4  |        |  | 56                          |                     |                        | SPT Sampler  | 4                 |         |
|                               |       |        |  |                             |                     |                        |  | 50/0.4'           |         |
|                               |       |        | LIMESTONE, fossiliferous, moderately hard, vuggy, 7.5YR 7/1 light gray                             |                             |                     |                        |  |                   |         |
|                               |       |        |  | 57                          | BOX                 | ROD                    |  |                   |         |
|                               |       |        |  |                             | 1                   | 8                      |  |                   |         |
| -14.5                         | 27.9  |        |  |                             |                     |                        | 4 x 5-1/2"<br>DT = 8 mins<br>HP = 200 psi<br>DFR = 75 %                    |                   | 25      |
|                               |       |        |  |                             |                     |                        |  |                   |         |
|                               |       |        | NOTES:   |                             |                     |                        | 140# hammer w/30" drop used with 2.0' split spoon (1-3/8" I.D. x 2" O.D.). |                   |         |
|                               |       |        | 1. USACE Jacksonville is the custodian for these original files.                                   |                             |                     |                        | Abbreviations:   |                   |         |
|                               |       |        | 2. Soils are field visually classified in accordance with the Unified Soils Classification System. |                             |                     |                        | WOH = Weight of Hammer,  |                   |         |
|                               |       |        | 3. Grout   |                             |                     |                        | DT = Drill Time,   |                   |         |
|                               |       |        |  |                             |                     |                        | HP = Hydraulic Pressure,   |                   |         |
|                               |       |        |  |                             |                     |                        | DFR = Drill Fluid Return,  |                   |         |

| DRILLING LOG  |       |        | DIVISION<br>South Atlantic  |           | INSTALLATION<br>Jacksonville District                                 |  | SHEET 1<br>OF 2 SHEETS |         |
|---|-------|--------|---|-----------|---|--|------------------------|---------|
| 1. PROJECT<br>C&SF CERP WCA 3 DECOMP Part 2<br>L-5 South  |       |        |   |           | 5. SIZE AND TYPE OF BIT<br>See Remarks                                |  |                        |         |
| 2. BORING DESIGNATION<br>CP11-DCOMP-CB-0012   |       |        |   |           | 10. COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. Ft.)            |  |                        |         |
| 3. DRILLING AGENCY<br>Corps of Engineers - CESAM  |       |        |   |           | 11. MANUFACTURER'S DESIGNATION OF DRILL<br>Falling 1500               |  |                        |         |
| 4. NAME OF DRILLER<br>Charlie Brown   |       |        |   |           | 12. TOTAL SAMPLES<br>1  |  |                        |         |
| 5. DIRECTION OF BORING<br><input checked="" type="checkbox"/> VERTICAL<br><input type="checkbox"/> INCLINED |       |        |   |           | 13. TOTAL NUMBER CORE BOXES<br>1                                      |  |                        |         |
| 6. THICKNESS OF OVERBURDEN<br>N/A   |       |        |   |           | 14. ELEVATION GROUND WATER<br>7.3 Ft.                                 |  |                        |         |
| 7. DEPTH DRILLED INTO ROCK<br>N/A   |       |        |   |           | 15. DATE BORING<br>03-19-11   |  |                        |         |
| 8. TOTAL DEPTH OF BORING<br>22.9 Ft.  |       |        |   |           | 16. ELEVATION TOP OF BORING<br>13.7 Ft.                               |  |                        |         |
|   |       |        |   |           | 17. TOTAL RECOVERY FOR BORING<br>59 %                                 |  |                        |         |
|   |       |        |   |           | 18. SIGNATURE AND TITLE OF INSPECTOR<br>Michael Fitzharris, Geologist |  |                        |         |
| ELEV.   | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS   | %<br>REC. | R/O<br>OR<br>UD   | REMARKS  | BLOWS/<br>0.5 FT.      | N-VALUE |
| 13.7  | 0.0   |        | FILL, sandy, some gravel, trace clay and shells, 2.5Y 6/2 light brownish gray | 73        |   | 13.7   | 15                     | 0       |
|   |       |        |   |           |   | SPT Sampler  | 23                     | 43      |
|   |       |        |   | 60        |   | 12.2   | 20                     |         |
|   |       |        |   |           |   | SPT Sampler  | 9                      | 18      |
|   |       |        |   |           |   | 10.7   | 9                      |         |
|   |       |        |   | 58        |   | SPT Sampler  | 5                      |         |
|   |       |        |   |           |   | 9.2  | 34                     | 84      |
| 9.2   | 4.5   |        | SAND, silty, some shell fragments, 2.5Y 6/2 light brownish gray (SM)          |           |   |  | 50                     |         |
| 8.8   | 4.9   |        | CLAY, organic-H, some shell fragments, 2.5Y 2.5/1 black (OH)                  | 57        |   | SPT Sampler  | 3                      | 5       |
| 7.7   | 6.0   |        | CLAY, fat, trace sand, 2.5Y 2.5/1 black (CH)                                  |           |   | 7.7  | 4                      | 9       |
| 7.2   | 6.5   |        | CLAY, organic-H, trace sand and gravel, trace shells, 2.5Y 2.5/1 black (OH)   | 100       |   | SPT Sampler  | 5                      |         |
|   |       |        |   |           |   | 6.2  | 2                      | 4       |
|   |       |        |   | 83        |   | SPT Sampler  | 2                      |         |
| 5.0   | 8.7   |        | CLAY, lean, trace gravel, 2.5Y 5/1 gray (CL)                                  |           |   | 5.0  | 5                      | 55+     |
| 4.9   | 8.8   |        | LIMESTONE, fossiliferous, vuggy, 10YR 7/1 light gray                          | 96        | RQD<br>38   | 4 x 5-1/2"<br>DT = 11 mins<br>HP = 200 psi<br>DFR = 40 % | 50/0.2                 |         |
|   |       |        | At El. 3.7 Ft., highly weathered, 10YR 6/3 pale brown                         |           |   | 3.7  |                        | 10      |
|   |       |        |   | 32        | BOX<br>1  | 4 x 5-1/2"<br>DT = 9 mins<br>HP = 200 psi<br>DFR = 40 %  |                        |         |
|   |       |        |   |           |   | 0.3  |                        |         |
|   |       |        |   | 22        | RQD<br>0  | 4 x 5-1/2"<br>DT = 5 mins<br>HP = 200 psi<br>DFR = 5 %   |                        | 15      |

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(Continued)

| DRILLING LOG (Cont. Sheet)                      |       |  | INSTALLATION<br>Jacksonville District                  |           | SHEET 2<br>OF 2 SHEETS |                    |   |                   |         |
|---|-------|--|--|-----------|------------------------|--------------------|---|-------------------|---------|
| PROJECT<br>C&SF CERP WCA 3 DECOMP Part 2        |       |  | COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. Ft.) |           | HORIZONTAL<br>NAD83    | VERTICAL<br>NAVD88 |   |                   |         |
| LOCATION COORDINATES<br>X = 774,031 Y = 726,857 |       |  | ELEVATION TOP OF BORING<br>13.7 Ft.                    |           |                        |                    |   |                   |         |
| ELEV.   | DEPTH | LEGEND   | CLASSIFICATION OF MATERIALS                            | %<br>REC. | BOX<br>OR<br>SAMPLE    | ROD<br>OR<br>UP    | REMARKS   | BLOWS/<br>0.5 FT. | N-VALUE |
|   |       |  |  | 22        |                        | ROD<br>0           | 4 x 5-1/2"<br>DT = 5 mins<br>HP = 200 psi<br>DFR = 5 %  |                   |         |
|   |       |  |  |           |                        | BOX<br>1           |   |                   |         |
|   |       |  |  | 31        | 1                      | ROD<br>27          | 4 x 5-1/2"<br>DT = 5 mins<br>HP = 200 psi<br>DFR = 5 %  |                   |         |
| -9.2  | 22.9  |  |  |           |                        |                    | -9.2  |                   |         |
|   |       | NOTES:<br>1. USACE Jacksonville is the custodian for these original files.<br>2. Soils are field visually classified in accordance with the Unified Soils Classification System.<br>3. Grout |  |           |                        |                    | 140# hammer w/30" drop used with 2.0' split spoon (1-3/8" I.D. x 2" O.D.).<br><br>Abbreviations:<br>DT = Drill Time.<br>HP = Hydraulic Pressure.<br>DFR = Drill Fluid Return. |                   |         |

| DRILLING LOG  |       | DIVISION<br>South Atlantic                      |   | INSTALLATION<br>Jacksonville District                                 |                            | SHEET 1<br>OF 2 SHEETS  |   |                   |         |
|---|-------|---|---|---|----------------------------|---|---|-------------------|---------|
| 1. PROJECT<br>C&SF CERP WCA 3 DECOMP Part 2<br>L-5 South  |       |   |   | 5. SIZE AND TYPE OF BIT<br>See Remarks                                |                            |   |   |                   |         |
| 2. BORING DESIGNATION<br>CP11-DCOMP-CB-0014   |       | LOCATION COORDINATES<br>X = 770,021 Y = 726,834 |   | 10. COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. Ft.)            |                            | HORIZONTAL<br>NAD83   |   |                   |         |
| 3. DRILLING AGENCY<br>Corps of Engineers - CESAM  |       | CONTRACTOR FILE NO.                             |   | 11. MANUFACTURER'S DESIGNATION OF DRILL<br>Falling 1500               |                            | <input type="checkbox"/> AUTO HAMMER<br><input checked="" type="checkbox"/> MANUAL HAMMER |   |                   |         |
| 4. NAME OF DRILLER<br>Charlie Brown   |       |   |   | 12. TOTAL SAMPLES<br>0  |                            | DISTURBED<br>0  |   |                   |         |
| 5. DIRECTION OF BORING<br><input checked="" type="checkbox"/> VERTICAL<br><input type="checkbox"/> INCLINED |       |   |   | 13. TOTAL NUMBER CORE BOXES<br>2                                      |                            | 14. ELEVATION GROUND WATER<br>Not Encountered   |   |                   |         |
| 6. THICKNESS OF OVERBURDEN<br>N/A   |       |   |   | 15. DATE BORING<br>03-18-11   |                            | COMPLETED<br>03-18-11   |   |                   |         |
| 7. DEPTH DRILLED INTO ROCK<br>N/A   |       |   |   | 16. ELEVATION TOP OF BORING<br>14.7 Ft.                               |                            | 17. TOTAL RECOVERY FOR BORING<br>70 %   |   |                   |         |
| 8. TOTAL DEPTH OF BORING<br>21.5 Ft.  |       |   |   | 18. SIGNATURE AND TITLE OF INSPECTOR<br>Michael Fitzharris, Geologist |                            |   |   |                   |         |
| ELEV.   | DEPTH | LEGEND  | CLASSIFICATION OF MATERIALS   | %<br>REC.   | R/O<br>BOX<br>OR<br>SAMPLE | R/O<br>OR<br>UD   | REMARKS   | BLOWS/<br>0.5 FT. | N-VALUE |
| 14.7  | 0.0   |   | FILL, sandy, mainly silty sand with some gravel, trace clay, 2.5Y 7/1 light gray                      | 87  |                            |   | 14.7  | 45                | 0       |
|   |       |   |   |   |                            |   | SPT Sampler   | 48                | 76      |
|   |       |   |   |   |                            |   | 13.2  | 28                |         |
|   |       |   |   | 53  |                            |   | SPT Sampler   | 7                 | 26      |
|   |       |   |   |   |                            |   | 11.7  | 13                |         |
| 11.7  | 3.0   |   | SAND, clayey, low plasticity, some silt and gravel, 2.5YR 5/1 reddish gray (SC)                       | 100   |                            |   | SPT Sampler   | 19                |         |
|   |       |   |   |   |                            |   | 10.2  | 50                |         |
| 10.2  | 4.5   |   | SAND, silty, some clay and gravel, 10YR 6/2 light brownish gray (SM)                                  | 100   |                            |   | SPT Sampler   | 50/0.3'           |         |
| 9.9   | 4.8   |   | LIMESTONE, fossiliferous, moderately hard, weathered, slightly fractured, vuggy, 7.5YR 7/1 light gray | 57  |                            | R/O<br>0  | 4 x 5-1/2"<br>DT = 14 mins<br>HP = 300 psi<br>DFR = 100 % |                   | 5       |
|   |       |   |   |   |                            |   | 6.9   |                   |         |
|   |       |   | At El. 5.9 Ft., highly fractured, 7.5YR 8/1 white   | 74  | BOX<br>1                   | R/O<br>22   | 4 x 5-1/2"<br>DT = 11 mins<br>HP = 200 psi<br>DFR = 80 %  |                   | 10      |
|   |       |   |   |   |                            |   | 1.9   |                   |         |
|   |       |   |   | 62  |                            | R/O<br>0  | 4 x 5-1/2"<br>DT = 8 mins<br>HP = 200 psi<br>DFR = 80 %   |                   | 15      |

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(Continued)



| DRILLING LOG (Cont. Sheet)   |       |          | INSTALLATION<br>Jacksonville District  |         | SHEET 2<br>OF 7 SHEETS |                    |  |                |         |
|--|-------|----------|--|---------|------------------------|--------------------|--|----------------|---------|
| PROJECT<br>C&SF CERP WCA 3 DECOMP Part 2   |       |          | COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. Ft.)   |         | HORIZONTAL<br>NAD83    | VERTICAL<br>NAVD88 |  |                |         |
| LOCATION COORDINATES<br>X = 770.021 Y = 726.834  |       |          | ELEVATION TOP OF BORING<br>14.7 FL.  |         |                        |                    |  |                |         |
| ELEV.  | DEPTH | LEGEND   | CLASSIFICATION OF MATERIALS  | W. REC. | BOX ROD SAMPLE         | ROD LOG UP         | REMARKS  | BLOWS/ 5.5 FT. | N-VALUE |
| -6.8   | 21.5  | Wellhead |  | 62      | BOX ROD 1              | 0                  | 4 x 5-1/2"<br>DT = 8 mins.<br>HP = 200 psi<br>DFR = 80 %<br>-1.8 |                |         |
|  |       |          |  | 28      | BOX ROD 2              | 0                  | 4 x 5-1/2"<br>DT = 6 mins.<br>HP = 200 psi<br>DFR = 0 %<br>-6.8  |                |         |
| NOTES:<br>1. USACE Jacksonville is the custodian for these original files.<br>2. Soils are field visually classified in accordance with the Unified Soils Classification System.<br>3. Grout |       |          | 140# hammer w/30" drop used with 2.0' split spoon (1-3/8" I.D. x 2" O.D.).<br>Abbreviations:<br>DT = Drill Time.<br>HP = Hydraulic Pressure<br>DFR = Drill Fluid Return. |         |                        |                    |  |                |         |

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| DRILLING LOG  |       | DIVISION<br>South Atlantic                      |   | INSTALLATION<br>Jacksonville District                                 |                     | SHEET 1<br>OF 2 SHEETS  |   |                   |         |
|---|-------|---|---|---|---------------------|---|---|-------------------|---------|
| 1. PROJECT<br>C&SF CERP WCA 3 DECOMP Part 2<br>L-5 South  |       |   |   | 5. SIZE AND TYPE OF BIT<br>See Remarks                                |                     |   |   |                   |         |
| 2. BORING DESIGNATION<br>CP11-DCOMP-CB-0016   |       | LOCATION COORDINATES<br>X = 766,059 Y = 726,798 |   | 10. COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. Ft.)            |                     | HORIZONTAL<br>NAD83<br>VERTICAL<br>NAVD88   |   |                   |         |
| 3. DRILLING AGENCY<br>Corps of Engineers - CESAM  |       | CONTRACTOR FILE NO.                             |   | 11. MANUFACTURER'S DESIGNATION OF DRILL<br>Falling 1500               |                     | <input type="checkbox"/> AUTO HAMMER<br><input checked="" type="checkbox"/> MANUAL HAMMER |   |                   |         |
| 4. NAME OF DRILLER<br>Charlie Brown   |       |   |   | 12. TOTAL SAMPLES<br>1  |                     | DISTURBED<br>0<br>UNDISTURBED (U0)  |   |                   |         |
| 5. DIRECTION OF BORING<br><input checked="" type="checkbox"/> VERTICAL<br><input type="checkbox"/> INCLINED |       | DEG. FROM<br>VERTICAL                           |   | 13. TOTAL NUMBER CORE BOXES<br>1                                      |                     | 14. ELEVATION GROUND WATER<br>6.6 Ft.   |   |                   |         |
| 6. THICKNESS OF OVERBURDEN<br>N/A   |       | BEARING   |   | 15. DATE BORING<br>03-18-11   |                     | STARTED<br>03-18-11<br>COMPLETED<br>03-18-11  |   |                   |         |
| 7. DEPTH DRILLED INTO ROCK<br>N/A   |       |   |   | 16. ELEVATION TOP OF BORING<br>15.3 Ft.                               |                     | 17. TOTAL RECOVERY FOR BORING<br>76 %   |   |                   |         |
| 8. TOTAL DEPTH OF BORING<br>16.0 Ft.  |       |   |   | 18. SIGNATURE AND TITLE OF INSPECTOR<br>Michael Fitzharris, Geologist |                     |   |   |                   |         |
| ELEV.   | DEPTH | LEGEND  | CLASSIFICATION OF MATERIALS   | %<br>REC.   | BOX<br>OR<br>SAMPLE | ROD<br>OR<br>UD   | REMARKS                                   | BLOWS/<br>0.5 FT. | N-VALUE |
| 15.3  | 0.0   |   | FILL, sandy, low plasticity, some clay; some gravel, 5Y 4/1 dark gray                                       | 80  |                     |   | 15.3                                      | 18                | 0       |
|   |       |   |   |   |                     |   | SPT Sampler                               | 23                |         |
|   |       |   |   |   |                     |   | 13.8                                      | 15                | 38      |
|   |       |   |   | 67  |                     |   | SPT Sampler                               | 9                 |         |
|   |       |   |   |   |                     |   | 12.3                                      | 13                | 30      |
| 12.3  | 3.0   |   | SAND, clayey, medium plasticity, some gravel; little silt; little shells; some organics, 10YR 5/1 gray (SC) | 100   |                     |   |   | 17                |         |
|   |       |   |   |   |                     |   | SPT Sampler                               | 13                |         |
|   |       |   |   |   |                     |   | 10.8                                      | 10                | 22      |
|   |       |   | At El. 10.8 Ft., trace organics, 10YR 5/2 grayish brown   | 87  |                     |   |   | 12                |         |
|   |       |   |   |   |                     |   | SPT Sampler                               | 13                | 5       |
| 9.3   | 6.0   |   | CLAY, fat, gravelly; some coarse sand; shell fragments; some fibrous material, 10YR 2/1 black (CH)          | 67  |                     |   |   | 8                 |         |
| 8.7   | 6.6   |   | CLAY, organic-H, 10YR 2/1 black (OH)  |   |                     |   |   | 4                 |         |
|   |       |   | From El. 7.8 to 4.8 Ft., moist, trace calcareous gravel, 10YR 2/2 very dark brown                           | 100   |                     |   |   | 4                 | 6       |
|   |       |   |   |   |                     |   | SPT Sampler                               | 2                 |         |
|   |       |   |   |   |                     |   | 7.8                                       | 1                 |         |
|   |       |   |   | 53  |                     |   |   | 1                 | 2       |
|   |       |   |   |   |                     |   | SPT Sampler                               | 1                 |         |
| 4.8   | 10.5  |   | CLAY, fat, moist, some coarse-grained sand; some organics, 7.5YR 6/1 gray (CH)                              | 63  |                     |   |   | 3                 | 5       |
| 4.0   | 11.3  |   | LIMESTONE, fossiliferous, moderately hard, vuggy, 10YR 7/1 light gray                                       |   |                     |   |   | 2                 |         |
|   |       |   |   |   |                     |   | SPT Sampler                               | 10                | 10      |
|   |       |   |   |   |                     |   | 4.0                                       | 50/0.3'           |         |
|   |       |   | At El. 2.1 Ft., open aperture   | 70  | BOX                 | ROD   |   |                   |         |
|   |       |   |   |   | 1                   | 45  |   |                   |         |
|   |       |   |   |   |                     |   | 4 x 5-1/2"<br>HP = 200 psi<br>DFR = 100 % |                   |         |

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| DRILLING LOG (Cont. Sheet)    |       |        | INSTALLATION   |           | SHEET 2<br>OF 2 SHEETS |                 |  |                   |         |
|-------------------------------|-------|--------|--|-----------|------------------------|-----------------|--|-------------------|---------|
| PROJECT                       |       |        | COORDINATE SYSTEM/DATUM  |           | HORIZONTAL             | VERTICAL        |  |                   |         |
| C&SF CERP WCA 3 DECOMP Part 2 |       |        | State Plane, FLE (U.S. Ft.)  |           | NAD83                  | NAVD88          |  |                   |         |
| LOCATION COORDINATES          |       |        | ELEVATION TOP OF BORING  |           |                        |                 |  |                   |         |
| X = 766,059 Y = 726,798       |       |        | 15.3 Ft.   |           |                        |                 |  |                   |         |
| ELEV.                         | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS  | %<br>REC. | BOX<br>SAMPLE<br>NO.   | ROD<br>OR<br>UD | REMARKS  | BLOWS/<br>0.5 FT. | N-VALUE |
| -0.7                          | 16.0  |        |  | 70        | BOX                    | ROD             | 4 x 5-1/2"<br>HP = 200 psi<br>DFR = 100 %  |                   |         |
|                               |       |        | NOTES:<br>1. USACE Jacksonville is the custodian for these original files.<br>2. Soils are field visually classified in accordance with the Unified Soils Classification System.<br>3. Grout |           |                        |                 | 140# hammer w/30" drop used with 2.0' split spoon (1-3/8" I.D. x 2" O.D.).<br><br>Abbreviations:<br>HP = Hydraulic Pressure<br>DFR = Drill Fluid Return. |                   |         |

| DRILLING LOG  |       |        | DIVISION<br>South Atlantic   |        | INSTALLATION<br>Jacksonville District                                      |   | SHEET 1<br>OF 2 SHEETS                    |         |  |  |
|---|-------|--------|--|--------|--|---|---|---------|--|--|
| 1. PROJECT<br>C&SF CERP WCA 3 DECOMP Part 2<br>L-5 South  |       |        |  |        | 9. SIZE AND TYPE OF BIT See Remarks  |   |   |         |  |  |
| 2. BORING DESIGNATION<br>CP11-DCOMP-CB-0018   |       |        | LOCATION COORDINATES<br>X = 761,968 Y = 726,749  |        | 10. COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. Ft.)                 |   | HORIZONTAL<br>NAD83<br>VERTICAL<br>NAVD88 |         |  |  |
| 3. DRILLING AGENCY<br>Corps of Engineers - CESAM  |       |        | CONTRACTOR FILE NO.  |        | 11. MANUFACTURER'S DESIGNATION OF DRILL<br>Falling 1500                    |   |   |         |  |  |
| 4. NAME OF DRILLER<br>Charlie Brown   |       |        |  |        | 12. TOTAL SAMPLES<br>DISTURBED 0<br>UNDISTURBED (U0) 0                     |   |   |         |  |  |
| 5. DIRECTION OF BORING<br><input checked="" type="checkbox"/> VERTICAL<br><input type="checkbox"/> INCLINED |       |        |  |        | 13. TOTAL NUMBER CORE BOXES 1  |   |   |         |  |  |
| 6. THICKNESS OF OVERBURDEN N/A  |       |        |  |        | 14. ELEVATION GROUND WATER 7.4 Ft.   |   |   |         |  |  |
| 7. DEPTH DRILLED INTO ROCK N/A  |       |        |  |        | 15. DATE BORING<br>STARTED 03-18-11<br>COMPLETED 03-18-11                  |   |   |         |  |  |
| 8. TOTAL DEPTH OF BORING 13.7 Ft.   |       |        |  |        | 16. ELEVATION TOP OF BORING 14.8 Ft.                                       |   |   |         |  |  |
|   |       |        |  |        | 17. TOTAL RECOVERY FOR BORING 61 %   |   |   |         |  |  |
|   |       |        |  |        | 18. SIGNATURE AND TITLE OF INSPECTOR<br>Michael Fitzharris, Geologist      |   |   |         |  |  |
| ELEV.   | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS  | % REC. | BOX<br>OR<br>ROD   | REMARKS                                   | BLOWS/<br>0.5 FT.                         | N-VALUE |  |  |
| 14.8  | 0.0   |        | FILL, sandy, some gravel, trace roots, trace clay and shell fragments, 7.5YR 6/1 gray  | 86     |  | 14.8                                      |   |         |  |  |
|   |       |        |  |        |  | SPT Sampler                               | 27  | 98      |  |  |
|   |       |        |  |        |  |   | 48  |         |  |  |
|   |       |        |  |        |  |   | 50  |         |  |  |
|   |       |        | SAND, clayey, moist, some organic soil; some silt and gravel, 7.5YR 5/1 gray (SC)  | 53     |  | 13.3                                      |   |         |  |  |
|   |       |        |  |        |  | SPT Sampler                               | 18  | 84      |  |  |
|   |       |        |  |        |  |   | 35  |         |  |  |
|   |       |        |  |        |  |   | 49  |         |  |  |
| 11.8  | 3.0   |        | LIMESTONE, vuggy, 10YR 7/2 light gray<br>At El. 10.3 Ft., moderately fractured   | 100    |  | 11.8                                      |   |         |  |  |
|   |       |        |  |        |  | SPT Sampler                               | 23  | 68+     |  |  |
|   |       |        |  |        |  |   | 18  |         |  |  |
|   |       |        |  |        |  |   | 50/0.1'                                   |         |  |  |
| 10.4  | 4.4   |        | CLAY, organic-H, moist, some fibrous plant material, 10YR 2/1 black (OH)   | 27     | BOX ROD<br>1 0   | DT = 4 mins<br>HP = 200 psi<br>DFR = 75 % |   |         |  |  |
|   |       |        |  |        |  |   |   |         |  |  |
|   |       |        |  |        |  |   |   |         |  |  |
|   |       |        |  |        |  |   |   |         |  |  |
| 8.3   | 6.5   |        | LIMESTONE, intensely weathered, 10YR 5/6 yellowish brown<br>From El. 6.4 to 5.0 Ft., fossiliferous, pitted; shell fragments, 10YR 7/2 light gray<br>At El. 5.0 Ft., moderately fractured | 43     |  | 8.3                                       |   |         |  |  |
|   |       |        |  |        |  | SPT Sampler                               | 2   | 11      |  |  |
|   |       |        |  |        |  |   | 4   |         |  |  |
|   |       |        |  |        |  |   | 7   |         |  |  |
| 6.8   | 8.0   |        | LIMESTONE, intensely weathered, 10YR 5/6 yellowish brown<br>From El. 6.4 to 5.0 Ft., fossiliferous, pitted; shell fragments, 10YR 7/2 light gray<br>At El. 5.0 Ft., moderately fractured | 50     |  | 6.8                                       |   |         |  |  |
|   |       |        |  |        |  | SPT Sampler                               | 50/0.4'                                   | 10      |  |  |
|   |       |        |  |        |  |   |   |         |  |  |
|   |       |        |  |        |  |   |   |         |  |  |
|   |       |        | LIMESTONE, intensely weathered, 10YR 5/6 yellowish brown<br>From El. 6.4 to 5.0 Ft., fossiliferous, pitted; shell fragments, 10YR 7/2 light gray<br>At El. 5.0 Ft., moderately fractured | 68     | BOX ROD<br>1 33  | DT = 9 mins<br>HP = 200 psi<br>DFR = 60 % |   |         |  |  |
|   |       |        |  |        |  |   |   |         |  |  |
|   |       |        |  |        |  |   |   |         |  |  |
|   |       |        |  |        |  |   |   |         |  |  |
| 1.1   | 13.7  |        | LIMESTONE, intensely weathered, 10YR 5/6 yellowish brown<br>From El. 6.4 to 5.0 Ft., fossiliferous, pitted; shell fragments, 10YR 7/2 light gray<br>At El. 5.0 Ft., moderately fractured |        |  | 1.1                                       |   |         |  |  |
|   |       |        |  |        |  |   |   |         |  |  |
|   |       |        |  |        |  |   |   |         |  |  |
|   |       |        |  |        |  |   |   |         |  |  |
| NOTES:<br>1. USACE Jacksonville is the custodian for  |       |        |  |        | 140# hammer w/30" drop used with 2.0' split spoon (1-3/8" I.D. x 2" O.D.), |   |   |         |  |  |

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(Continued)

| DRILLING LOG (Cont. Sheet)                      |       |        | INSTALLATION<br>Jacksonville District   |            | SHEET 2<br>OF 7 SHEETS |                    |  |                   |         |
|---|-------|--------|---|------------|------------------------|--------------------|--|-------------------|---------|
| PROJECT<br>C&SF CERP WCA 3 DECOMP Part 2        |       |        | COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. Ft.)  |            | HORIZONTAL<br>NAD83    | VERTICAL<br>NAVD88 |  |                   |         |
| LOCATION COORDINATES<br>X = 761,968 Y = 726,749 |       |        | ELEVATION TOP OF BORING<br>14.8 Ft.   |            |                        |                    |  |                   |         |
| ELEV.   | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS   | W.<br>REC. | BOX OR<br>SAMPLE       | ROD<br>UP          | REMARKS  | BLOWS/<br>5.5 FT. | N-VALUE |
|   |       |        | these original files.<br><br>2. Soils are field visually classified in accordance with the Unified Soils Classification System.<br><br>3. Grout |            |                        |                    | Abbreviations:<br>DT = Drill Time<br>HP = Hydraulic Pressure<br>DFR = Drill Fluid Return |                   |         |

| DRILLING LOG  |       | DIVISION<br>South Atlantic                      |  | INSTALLATION<br>Jacksonville District                                 |            | SHEET 1<br>OF 2 SHEETS  |  |                   |         |
|---|-------|---|--|---|------------|---|--|-------------------|---------|
| 1. PROJECT<br>C&SF CERP WCA 3 DECOMP Part 2<br>L-5 South  |       |   |  | 9. SIZE AND TYPE OF BIT See Remarks                                   |            |   |  |                   |         |
| 2. BORING DESIGNATION<br>CP11-DCOMP-CB-0020   |       | LOCATION COORDINATES<br>X = 757,988 Y = 726,710 |  | 10. COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. Ft.)            |            | HORIZONTAL<br>NAD83<br>VERTICAL<br>NAVD88   |  |                   |         |
| 3. DRILLING AGENCY<br>Corps of Engineers - CESAJ  |       | CONTRACTOR FILE NO.                             |  | 11. MANUFACTURER'S DESIGNATION OF DRILL<br>Falling 1500               |            | <input type="checkbox"/> AUTO HAMMER<br><input checked="" type="checkbox"/> MANUAL HAMMER |  |                   |         |
| 4. NAME OF DRILLER<br>Charlie Brown   |       |   |  | 12. TOTAL SAMPLES<br>0  |            | DISTURBED<br>0<br>UNDISTURBED (U0)<br>0   |  |                   |         |
| 5. DIRECTION OF BORING<br><input checked="" type="checkbox"/> VERTICAL<br><input type="checkbox"/> INCLINED |       | DEG. FROM<br>VERTICAL                           |  | 13. TOTAL NUMBER CORE BOXES<br>1                                      |            | 14. ELEVATION GROUND WATER<br>Not Encountered   |  |                   |         |
| 6. THICKNESS OF OVERBURDEN<br>N/A   |       | BEARING   |  | 15. DATE BORING<br>03-17-11   |            | STARTED<br>03-17-11<br>COMPLETED<br>03-17-11  |  |                   |         |
| 7. DEPTH DRILLED INTO ROCK<br>N/A   |       |   |  | 16. ELEVATION TOP OF BORING<br>14.4 Ft.                               |            | 17. TOTAL RECOVERY FOR BORING<br>57 %   |  |                   |         |
| 8. TOTAL DEPTH OF BORING<br>17.2 Ft.  |       |   |  | 18. SIGNATURE AND TITLE OF INSPECTOR<br>Michael Fitzharris, Geologist |            |   |  |                   |         |
| ELEV.   | DEPTH | LEGEND  | CLASSIFICATION OF MATERIALS  | %<br>REC.   | BOX<br>NO. | ROD<br>OR<br>UD   | REMARKS                                    | BLOWS/<br>0.5 FT. | N-VALUE |
| 14.4  | 0.0   |   | FILL, sandy, some gravel; trace clay; shell fragments, 5Y 7/1 light gray       | 83  |            |   | 14.4                                       |                   |         |
| 13.8  | 0.6   |   | LIMESTONE, moderately hard, weathered, vuggy, 10YR 6/1 gray                    | 44  | BOX        | ROD 19  | DT = 5 mins<br>HP = 200 psi<br>DFR = 100 % | 27                |         |
| 12.0  | 2.4   |   | SAND, silty, some gravel; little clay, 5Y 7/1 light gray (SM)                  | 73  |            |   | SPT Sampler                                | 24                |         |
|   |       |   |  | 63  |            |   | SPT Sampler                                | 24                | 47      |
|   |       |   |  |   |            |   |  | 10.5              | 23      |
|   |       |   |  |   |            |   |  | 17                |         |
|   |       |   |  |   |            |   |  | 30                | 49      |
| 8.7   | 5.7   |   | CLAY, organic-H, moist, trace clay, 5Y 2.5/1 black (OH)                        | 33  |            |   | SPT Sampler                                | 19                | 5       |
|   |       |   |  |   |            |   |  | 9.0               |         |
|   |       |   |  |   |            |   |  | 6                 |         |
|   |       |   |  |   |            |   |  | 2                 | 4       |
| 7.1   | 7.3   |   | SAND, silty, 5Y 5/2 olive gray (SM)  | 60  |            |   | SPT Sampler                                | 2                 |         |
|   |       |   |  |   |            |   |  | 7.5               |         |
|   |       |   |  |   |            |   |  | 2                 |         |
|   |       |   |  |   |            |   |  | 12                | 32      |
|   |       |   |  |   |            |   |  | 6.0               | 20      |
|   |       |   |  |   |            |   |  | 14                |         |
|   |       |   |  | 53  |            |   | SPT Sampler                                | 4                 | 7       |
|   |       |   |  |   |            |   |  | 4.5               |         |
|   |       |   |  |   |            |   |  | 8                 |         |
|   |       |   |  | 67  |            |   | SPT Sampler                                | 6                 | 24      |
|   |       |   |  |   |            |   |  | 3.0               |         |
|   |       |   |  |   |            |   |  | 18                |         |
|   |       |   |  | 47  |            |   | SPT Sampler                                | 43                | 39      |
|   |       |   |  |   |            |   |  | 1.5               |         |
|   |       |   |  |   |            |   |  | 7                 |         |
|   |       |   |  | 73  |            |   | SPT Sampler                                | 2                 | 43      |
|   |       |   |  |   |            |   |  | 5                 |         |
| 0.0   | 14.4  |   | LIMESTONE, fossiliferous, moderately hard, vuggy, some gravel; trace clay; low | 32  | BOX        | ROD 19  |  | 38                | 15      |

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(Continued)

| DRILLING LOG (Cont. Sheet)                      |       |        | INSTALLATION<br>Jacksonville District   |            |                     | SHEET 2<br>OF 7 SHEETS |   |                   |         |
|---|-------|--------|---|------------|---------------------|------------------------|---|-------------------|---------|
| PROJECT<br>C&SF CERP WCA 3 DECOMP Part 2        |       |        | COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. Ft.)  |            | HORIZONTAL<br>NAD83 | VERTICAL<br>NAVD88     |   |                   |         |
| LOCATION COORDINATES<br>X = 757,988 Y = 726,710 |       |        | ELEVATION TOP OF BORING<br>14.4 Ft.   |            |                     |                        |   |                   |         |
| ELEV.   | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS   | W.<br>REC. | BOX<br>OR<br>SAMPLE | RQD<br>UP<br>DOWN      | REMARKS   | BLOWS/<br>5.5 FT. | N-VALUE |
| -2.8  | 17.2  |        | cohesion; shell fragments, 10YR 5/1 gray  | 32         | BOX                 | RQD<br>19              | DT = 15 mins<br>HP = 200 psi<br>DFR = 100 %   |                   |         |
|   |       |        | NOTES:<br>1. USACE Jacksonville is the custodian for these original files.<br>2. Soils are field visually classified in accordance with the Unified Soils Classification System.<br>3. Grout. |            |                     |                        | 140# hammer w/30" drop used with 2.0' split spoon (1-3/8" I.D. x 2" O.D.).<br><br>Abbreviations:<br>DT = Drill Time.<br>HP = Hydraulic Pressure.<br>DFR = Drill Fluid Return. |                   |         |

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| DRILLING LOG  |  | DIVISION<br>South Atlantic                      |  | INSTALLATION<br>Jacksonville District                                 |  | SHEET 1<br>OF 2 SHEETS  |  |
|---|--|---|--|---|--|---|--|
| 1. PROJECT<br>C&SF CERP WCA 3 DECOMP Part 2<br>L-5 South  |  |   |  | 5. SIZE AND TYPE OF BIT<br>See Remarks                                |  |   |  |
| 2. BORING DESIGNATION<br>CP11-DCOMP-CB-0022   |  | LOCATION COORDINATES<br>X = 754,072 Y = 726,667 |  | 10. COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. Ft.)            |  | HORIZONTAL<br>NAD83<br>VERTICAL<br>NAVD83   |  |
| 3. DRILLING AGENCY<br>Corps of Engineers - CESAM  |  | CONTRACTOR FILE NO.                             |  | 11. MANUFACTURER'S DESIGNATION OF DRILL<br>Falling 1500               |  | <input type="checkbox"/> AUTO HAMMER<br><input checked="" type="checkbox"/> MANUAL HAMMER |  |
| 4. NAME OF DRILLER<br>Charlie Brown   |  |   |  | 12. TOTAL SAMPLES<br>0  |  | DISTURBED<br>0<br>UNDISTURBED (UD)<br>0   |  |
| 5. DIRECTION OF BORING<br><input checked="" type="checkbox"/> VERTICAL<br><input type="checkbox"/> INCLINED |  | DEG. FROM VERTICAL                              |  | 13. TOTAL NUMBER CORE BOXES<br>1                                      |  | 14. ELEVATION GROUND WATER<br>Not Encountered   |  |
| 6. THICKNESS OF OVERBURDEN<br>N/A   |  | 7. DEPTH DRILLED INTO ROCK<br>N/A               |  | 15. DATE BORING<br>03-17-11   |  | STARTED<br>03-17-11<br>COMPLETED<br>03-17-11  |  |
| 8. TOTAL DEPTH OF BORING<br>15.3 Ft.  |  |   |  | 16. ELEVATION TOP OF BORING<br>14.3 Ft.                               |  |   |  |
|   |  |   |  | 17. TOTAL RECOVERY FOR BORING<br>71 %                                 |  |   |  |
|   |  |   |  | 18. SIGNATURE AND TITLE OF INSPECTOR<br>Michael Fitzharris, Geologist |  |   |  |

| ELEV. | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS  | % REG. | BOX OR CORE SAMPLE | RQD OR UD | REMARKS  | BLOW COUNT | N-VALUE |
|-------|-------|--------|--|--------|--------------------|-----------|--|------------|---------|
| 14.3  | 0.0   |        | FILL, sandy, trace clay; some gravel; trace shells. 10YR 6/1 gray  | 80     |                    |           | 14.3   | 17         | 0       |
|       |       |        |  |        |                    |           | SPT Sampler                                      | 40         | 64      |
|       |       |        |  | 60     |                    |           | 12.8   | 24         |         |
|       |       |        |  |        |                    |           | SPT Sampler                                      | 16         |         |
|       |       |        |  |        |                    |           | 11.3   | 20         | 38      |
|       |       |        |  |        |                    |           | SPT Sampler                                      | 18         |         |
| 10.7  | 3.6   |        | At El. 11.3 Ft., low plasticity  | 50     |                    |           | 10.7   | 17         |         |
|       |       |        | LIMESTONE, fossiliferous, weathered, vuggy, some clay infills; some oxidation staining. 2.5Y 6/1 gray                          |        |                    |           |  | 500.1      |         |
|       |       |        |  | 29     | BOX                | RQD       | 4 x 5-1/2" DT = 19 mins HP = 200 psi DFR = 100 % |            | 5       |
| 6.5   | 7.8   |        |  |        | 1                  | 0         | 6.5  |            |         |
|       |       |        | CLAY, organic-H, some fibrous plant material, 5Y 2.5/1 black (OH)  | 100    |                    |           |  | 1          | 2       |
|       |       |        |  |        |                    |           | SPT Sampler                                      | 1          |         |
|       |       |        |  |        |                    |           | 5.0  | 1          |         |
|       |       |        |  | 93     |                    |           |  | 1          | 10      |
|       |       |        |  |        |                    |           | SPT Sampler                                      | 1          |         |
| 3.5   | 10.8  |        |  |        |                    |           | 3.5  | 1          | 2       |
|       |       |        | LIMESTONE, fossiliferous, highly weathered, moderately fractured, fractured between 11.4 to 12.0 ft depth. 10YR 7/2 light gray | 82     | BOX                | RQD       | DT = 18 mins HP = 200 psi DFR = 60 %             |            |         |
|       |       |        |  |        | 1                  | 51        |  |            |         |

| DRILLING LOG (Cont. Sheet)    |       |        | INSTALLATION   |           | SHEET 2<br>OF 2 SHEETS |                 |  |                   |         |
|-------------------------------|-------|--------|--|-----------|------------------------|-----------------|--|-------------------|---------|
| PROJECT                       |       |        | COORDINATE SYSTEM/DATUM  |           | HORIZONTAL             | VERTICAL        |  |                   |         |
| C&SF CERP WCA 3 DECOMP Part 2 |       |        | State Plane, FLE (U.S. Ft.)  |           | NAD83                  | NAVD88          |  |                   |         |
| LOCATION COORDINATES          |       |        | ELEVATION TOP OF BORING  |           |                        |                 |  |                   |         |
| X = 754,072 Y = 726,667       |       |        | 14.3 Ft.   |           |                        |                 |  |                   |         |
| ELEV.                         | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS  | %<br>REC. | BOX<br>OR<br>SAMPLE    | ROD<br>OR<br>UP | REMARKS  | BLOWS/<br>0.3 Ft. | N-VALUE |
| -1.0                          | 15.3  |        | At El. -0.7 Ft., weak cementation  | 82        |                        |                 | -1.0   |                   |         |
|                               |       |        | NOTES:<br>1. USACE Jacksonville is the custodian for these original files.<br>2. Soils are field visually classified in accordance with the Unified Soils Classification System.<br>3. Grout |           |                        |                 | 140# hammer w/30" drop used with 2.0' split spoon (1-3/8" I.D. x 2" O.D.)<br><br>Abbreviations:<br>DT = Drill Time.<br>HP = Hydraulic Pressure.<br>DFR = Drill Fluid Return. |                   |         |

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| DRILLING LOG   |       | DIVISION<br>South Atlantic                      |   | INSTALLATION<br>Jacksonville District   |                     | SHEET 1<br>OF 1 SHEETS  |  |                   |         |
|--|-------|---|---|---|---------------------|---|--|-------------------|---------|
| 1. PROJECT<br>C&SF CERP WCA 3 DECOMP Part 2<br>L-5 South   |       |   |   | 9. SIZE AND TYPE OF BIT See Remarks   |                     |   |  |                   |         |
| 2. BORING DESIGNATION<br>CP11-DCOMP-CB-0024  |       | LOCATION COORDINATES<br>X = 750,077 Y = 726,617 |   | 10. COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. Ft.)  |                     | HORIZONTAL<br>NAD83<br>VERTICAL<br>NAVD88   |  |                   |         |
| 3. DRILLING AGENCY<br>Corps of Engineers - CESAM   |       | CONTRACTOR FILE NO.                             |   | 11. MANUFACTURER'S DESIGNATION OF DRILL<br>Falling 1500   |                     | <input type="checkbox"/> AUTO HAMMER<br><input checked="" type="checkbox"/> MANUAL HAMMER |  |                   |         |
| 4. NAME OF DRILLER<br>Charlie Brown  |       |   |   | 12. TOTAL SAMPLES<br>1  |                     | DISTURBED<br>0<br>UNDISTURBED (U0)  |  |                   |         |
| 5. DIRECTION OF BORING<br><input checked="" type="checkbox"/> VERTICAL<br><input type="checkbox"/> INCLINED  |       | DEG. FROM<br>VERTICAL                           |   | 13. TOTAL NUMBER CORE BOXES<br>1  |                     | 14. ELEVATION GROUND WATER<br>12.4 Ft.  |  |                   |         |
| 6. THICKNESS OF OVERBURDEN<br>N/A  |       | BEARING   |   | 15. DATE BORING<br>03-16-11   |                     | STARTED<br>03-17-11   |  |                   |         |
| 7. DEPTH DRILLED INTO ROCK<br>N/A  |       |   |   | 16. ELEVATION TOP OF BORING<br>14.3 Ft.   |                     | 17. TOTAL RECOVERY FOR BORING<br>67 %   |  |                   |         |
| 8. TOTAL DEPTH OF BORING<br>9.7 Ft.  |       |   |   | 18. SIGNATURE AND TITLE OF INSPECTOR<br>Michael Fitzharris, Geologist   |                     |   |  |                   |         |
| ELEV.  | DEPTH | LEGEND  | CLASSIFICATION OF MATERIALS   | %<br>REC.   | BOX<br>OR<br>SAMPLE | ROD<br>OR<br>UD   | REMARKS  | BLOWS/<br>0.5 FT. | N-VALUE |
| 14.3   | 0.0   |   | FILL, gravelly, some sand; strong HCL reaction, 5Y 7/1 light gray       | 67  |                     |   | 14.3   | 26                |         |
|  |       |   |   |   |                     |   | SPT Sampler  | 50                |         |
|  |       |   |   |   |                     |   | 12.8   |                   |         |
|  |       |   |   |   |                     |   | Advanced Boring  |                   |         |
| 11.3   | 3.0   |   |   |   |                     |   | 11.3   |                   |         |
| 10.8   | 3.5   |   | SAND, silty, strong reaction with HCl, 2.5Y 7/1 light gray (SM)         | 75  |                     |   | 10.8   | 50                |         |
|  |       |   | LIMESTONE, moderately hard, vuggy, 2.5Y 8/4 pale yellow                 |   |                     |   |  |                   |         |
| 8.8  | 5.5   |   |   |   |                     |   |  |                   |         |
|  |       |   | CLAY, organic-H, some calcareous sand and gravel, 2.5Y 2.5/1 black (OH) | 48  | 1                   | ROD<br>20   | 4 x 5-1/2"<br>DT = 11 mins<br>HP = 200 psi<br>DFR = 70 % |                   |         |
| 5.9  | 8.4   |   |   |   | BOX<br>1            |   | 5.8  |                   |         |
|  |       |   | LIMESTONE, 2.5Y 7/2 light gray  | 80  |                     | ROD<br>28   | 4 x 5-1/2"<br>DT = 8 mins<br>HP = 200 psi<br>DFR = 100 % |                   |         |
| 4.6  | 9.7   |   |   |   |                     |   | 4.6  |                   |         |
| NOTES:<br>1. USACE Jacksonville is the custodian for these original files.<br>2. Soils are field visually classified in accordance with the Unified Soils Classification System.<br>3. Grout |       |   |   | 140# hammer w/30" drop used with 2.0' split spoon (1-3/8" I.D. x 2" O.D.).<br>Abbreviations:<br>DT = Drill Time,<br>HP = Hydraulic Pressure,<br>DFR = Drill Fluid Return. |                     |   |  |                   |         |

| DRILLING LOG   |       | DIVISION<br>South Atlantic                      |  | INSTALLATION<br>Jacksonville District   |                     | SHEET 1<br>OF 2 SHEETS  |  |                   |         |
|--|-------|---|--|---|---------------------|---|--|-------------------|---------|
| 1. PROJECT<br>C&SF CERP WCA 3 DECOMP Part 2<br>L-5 South   |       |   |  | 5. SIZE AND TYPE OF BIT See Remarks   |                     |   |  |                   |         |
| 2. BORING DESIGNATION<br>CP11-DCOMP-CB-0026  |       | LOCATION COORDINATES<br>X = 745,190 Y = 726,559 |  | 10. COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. Ft.)  |                     | HORIZONTAL<br>NAD83<br>VERTICAL<br>NAVD88   |  |                   |         |
| 3. DRILLING AGENCY<br>Corps of Engineers - CESAM   |       | CONTRACTOR FILE NO.                             |  | 11. MANUFACTURER'S DESIGNATION OF DRILL<br>Falling 1500   |                     | <input type="checkbox"/> AUTO HAMMER<br><input checked="" type="checkbox"/> MANUAL HAMMER |  |                   |         |
| 4. NAME OF DRILLER<br>Charlie Brown  |       |   |  | 12. TOTAL SAMPLES<br>1  |                     | DISTURBED<br>1<br>UNDISTURBED (U0)<br>0   |  |                   |         |
| 5. DIRECTION OF BORING<br><input checked="" type="checkbox"/> VERTICAL<br><input type="checkbox"/> INCLINED  |       | DEG. FROM<br>VERTICAL                           |  | 13. TOTAL NUMBER CORE BOXES<br>1  |                     | 14. ELEVATION GROUND WATER<br>7.6 Ft.   |  |                   |         |
| 6. THICKNESS OF OVERBURDEN<br>N/A  |       | BEARING   |  | 15. DATE BORING<br>03-19-11   |                     | STARTED<br>03-19-11<br>COMPLETED<br>03-19-11  |  |                   |         |
| 7. DEPTH DRILLED INTO ROCK<br>N/A  |       |   |  | 16. ELEVATION TOP OF BORING<br>14.7 Ft.   |                     | 17. TOTAL RECOVERY FOR BORING<br>74 %   |  |                   |         |
| 8. TOTAL DEPTH OF BORING<br>12.2 Ft.   |       |   |  | 18. SIGNATURE AND TITLE OF INSPECTOR<br>Michael Fitzharris, Geologist   |                     |   |  |                   |         |
| ELEV.  | DEPTH | LEGEND  | CLASSIFICATION OF MATERIALS  | %<br>REC.   | BOX<br>OR<br>SAMPLE | RCD<br>OR<br>UD   | REMARKS  | BLOWS/<br>0.5 FT. | N-VALUE |
| 14.7   | 0.0   |   | FILL, sandy, trace gravel; trace shell fragments; some gravel, 5Y 4/1 dark gray                            | 80  |                     |   | 14.7   | 8                 | 0       |
|  |       |   |  |   |                     |   | SPT Sampler  | 16                | 35      |
|  |       |   |  | 67  |                     |   | 13.2   | 19                |         |
|  |       |   |  |   |                     |   | SPT Sampler  | 11                | 48      |
|  |       |   |  |   |                     |   | 11.7   | 24                |         |
|  |       |   |  | 75  |                     |   | SPT Sampler  | 21                |         |
|  |       |   |  |   |                     |   | 10.2   | 50                |         |
|  |       |   |  | 80  |                     |   | SPT Sampler  | 11                | 5       |
|  |       |   |  |   |                     |   | 8.7  | 5                 | 8       |
| 8.7  | 6.0   |   | CLAY, organic; H, some fibrous material; trace calcareous gravel, 2.5Y 2.5/1 black (OH)                    | 53  |                     |   | SPT Sampler  | 1                 | 8       |
| 7.2  | 7.5   |   | SAND, silty, some clay; some organics; little gravel; little shell fragments, 2.5Y 3/1 very dark gray (SM) | 63  |                     |   | 7.2  | 7                 |         |
|  |       |   |  |   |                     |   | SPT Sampler  | 3                 |         |
| 5.7  | 9.0   |   | LIMESTONE, fossiliferous, moderately hard, vuggy, 7.5YR 6/1 gray   |   |                     |   | 5.7  |                   |         |
|  |       |   | At El. 5.4 Ft., moderately fractured   |   |                     |   |  |                   |         |
|  |       |   | At El. 4.4 Ft., highly fractured   | 100   | BOX                 | RCD   | 4 x 5-1/2"<br>DT = 10 mins<br>HP = 200 psi<br>DFR = 90 % |                   | 10      |
| 2.5  | 12.2  |   |  |   | 1                   | 53  |  |                   |         |
| NOTES:<br>1. USACE Jacksonville is the custodian for these original files.<br>2. Soils are field visually classified in accordance with the Unified Soils Classification System. |       |   |  | 140# hammer w/30" drop used with 2.0' split spoon (1-3/8" I.D. x 2" O.D.).<br>Abbreviations:<br>DT = Drill Time.<br>HP = Hydraulic Pressure.<br>DFR = Drill Fluid Return. |                     |   |  |                   |         |

| DRILLING LOG (Cont. Sheet)                      |       |        | INSTALLATION<br>Jacksonville District                  |            | SHEET 2<br>OF 7 SHEETS |                    |         |                    |         |
|---|-------|--------|--|------------|------------------------|--------------------|---------|--------------------|---------|
| PROJECT<br>C&SF CERP WCA 3 DECOMP Part 2        |       |        | COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. Ft.) |            | HORIZONTAL<br>NAD83    | VERTICAL<br>NAVD88 |         |                    |         |
| LOCATION COORDINATES<br>X = 746,190 Y = 726,559 |       |        | ELEVATION TOP OF BORING<br>14.7 FT.                    |            |                        |                    |         |                    |         |
| ELEV.   | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS                            | W.<br>REC. | BOX OR<br>SAMPLE       | ROD<br>UP/D        | REMARKS | BLOWS/<br>U.S. FT. | N-VALUE |
|   |       |        | 3. Grout   |            |                        |                    |         |                    |         |

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| DRILLING LOG  |       | DIVISION<br>South Atlantic                      |   | INSTALLATION<br>Jacksonville District                      |                                   | SHEET 1<br>OF 2 SHEETS   |                   |         |
|---|-------|---|---|--|-----------------------------------|--|-------------------|---------|
| 1. PROJECT<br>C&SF CERP WCA 3 DECOMP Part 2<br>L-5 South  |       |   |   | 5. SIZE AND TYPE OF BIT See Remarks                        |                                   |  |                   |         |
| 2. BORING DESIGNATION<br>CP11-DCOMP-CB-0028   |       | LOCATION COORDINATES<br>X = 742,303 Y = 726,513 |   | 10. COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. Ft.) |                                   | HORIZONTAL<br>NAD83<br>VERTICAL<br>NAVD88  |                   |         |
| 3. DRILLING AGENCY<br>Corps of Engineers - CESAM  |       | CONTRACTOR FILE NO.                             |   | 11. MANUFACTURER'S DESIGNATION OF DRILL<br>Falling 1500    |                                   | <input type="checkbox"/> AUTO HAMMER<br><input checked="" type="checkbox"/> MANUAL HAMMER  |                   |         |
| 4. NAME OF DRILLER<br>Charlie Brown   |       |   |   | 12. TOTAL SAMPLES<br>1                                     |                                   | DISTURBED<br>UNDISTURBED (U0)<br>0   |                   |         |
| 5. DIRECTION OF BORING<br><input checked="" type="checkbox"/> VERTICAL<br><input type="checkbox"/> INCLINED   |       | DEG. FROM<br>VERTICAL                           |   | BEARING  |                                   | 13. TOTAL NUMBER CORE BOXES<br>1   |                   |         |
| 6. THICKNESS OF OVERBURDEN<br>N/A   |       | 7. DEPTH DRILLED INTO ROCK<br>N/A               |   | 8. TOTAL DEPTH OF BORING<br>12.6 Ft.                       |                                   | 14. ELEVATION GROUND WATER<br>Not Encountered  |                   |         |
|   |       |   |   |  |                                   | 15. DATE BORING<br>03-21-11<br>03-21-11  |                   |         |
|   |       |   |   |  |                                   | 16. ELEVATION TOP OF BORING<br>14.5 Ft.  |                   |         |
|   |       |   |   |  |                                   | 17. TOTAL RECOVERY FOR BORING<br>54 %  |                   |         |
|   |       |   |   |  |                                   | 18. SIGNATURE AND TITLE OF INSPECTOR<br>Michael Fitzharris, Geologist  |                   |         |
| ELEV.   | DEPTH | LEGEND  | CLASSIFICATION OF MATERIALS   | %<br>REC.  | BOX<br>OR<br>ROD<br>SAMPLE<br>NO. | REMARKS  | BLOWS/<br>0.5 FT. | N-VALUE |
| 14.5  | 0.0   |   | FILL, gravelly, 10YR 7/2 light gray   | 40   |                                   | 14.5   | 18                | 0       |
|   |       |   |   |  |                                   | SPT Sampler  | 20                | 34      |
|   |       |   |   |  |                                   | 13.0   | 14                |         |
|   |       |   |   | 60   |                                   | SPT Sampler  | 12                | 27      |
|   |       |   |   |  |                                   |  | 13                |         |
|   |       |   |   |  |                                   |  | 14                |         |
| 11.3  | 3.2   |   | At El. 11.6 Ft., trace organics; trace clay<br>LIMESTONE, moderately hard, very wide<br>aperture, vuggy, 7.5YR 5/1 gray | 100  |                                   | 11.5   | 50/0.2            |         |
|   |       |   |   | 80   | BOX ROD<br>1 0                    | 4 x 5-1/2"<br>DT = 5 mins<br>HP = 200 psi<br>DFR = 80 %  |                   | 5       |
| 8.8   | 5.7   |   | CLAY, organic-H, some calcareous gravel;<br>trace clay, 10YR 2/2 very dark brown (OH)                                   | 47   |                                   | 8.8  | Advanced Boring   |         |
|   |       |   |   |  |                                   |  | 4                 | 4       |
|   |       |   |   |  |                                   | SPT Sampler  | 2                 |         |
| 7.3   | 7.2   |   | LIMESTONE, intensely weathered, some<br>organics and fibrous material,<br>2.5YR 5/2 weak red                            | 43   |                                   | 7.3  | 6                 | 73+     |
|   |       |   |   |  |                                   | SPT Sampler  | 23                |         |
|   |       |   | At El. 5.9 Ft., fossiliferous, firm, vuggy, some<br>clay infilling, 7.5YR 5/1 gray                                      |  |                                   | 5.9  | 50/0.4            |         |
|   |       |   |   | 63   | BOX ROD<br>1 44                   | 4 x 5-1/2"<br>DT = 15 mins<br>HP = 200 psi<br>DFR = 100 %  |                   | 10      |
| 1.9   | 12.6  |   |   |  |                                   | 1.9  |                   |         |
| NOTES:<br>1. USACE Jacksonville is the custodian for these original files.<br>2. Soils are field visually classified in accordance with the Unified Soils |       |   |   |  |                                   | 140# hammer w/30" drop used with<br>2.0' split spoon (1-3/8" I.D. x 2" O.D.),<br><br>Abbreviations:<br>DT = Drill Time.<br>HP = Hydraulic Pressure.<br>DFR = Drill Fluid Return. |                   | 15      |

| DRILLING LOG (Cont. Sheet)                      |       |        | INSTALLATION<br>Jacksonville District                  |            | SHEET 2<br>OF 7 SHEETS |                    |         |                    |         |
|---|-------|--------|--|------------|------------------------|--------------------|---------|--------------------|---------|
| PROJECT<br>C&SF CERP WCA 3 DECOMP Part 2        |       |        | COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. Ft.) |            | HORIZONTAL<br>NAD83    | VERTICAL<br>NAVD88 |         |                    |         |
| LOCATION COORDINATES<br>X = 742,303 Y = 726,513 |       |        | ELEVATION TOP OF BORING<br>14.5 Ft.                    |            |                        |                    |         |                    |         |
| ELEV.   | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS                            | W.<br>REC. | BOX OR<br>SAMPLE       | ROD<br>UP          | REMARKS | BLOWS/<br>U.S. FT. | N-VALUE |
|   |       |        | Classification System.                                 |            |                        |                    |         |                    |         |
|   |       |        | 3. Grout   |            |                        |                    |         |                    |         |

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| DRILLING LOG  |       |        | DIVISION<br>South Atlantic  |           | INSTALLATION<br>Jacksonville District                                     |                 | SHEET 1<br>OF 2 SHEETS  |                   |         |
|---|-------|--------|---|-----------|---|-----------------|---|-------------------|---------|
| 1. PROJECT<br>C&SF CERP WCA 3 DECOMP Part 2<br>L-5 South  |       |        |   |           | 5. SIZE AND TYPE OF BIT See Remarks                                       |                 |   |                   |         |
| 2. BORING DESIGNATION<br>CP11-DCOMP-CB-0030   |       |        | LOCATION COORDINATES<br>X = 738,282 Y = 726,446                           |           | 10. COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. Ft.)                |                 | HORIZONTAL<br>NAD83   |                   |         |
| 3. DRILLING AGENCY<br>Corps of Engineers - CESAM  |       |        | CONTRACTOR FILE NO.   |           | 11. MANUFACTURER'S DESIGNATION OF DRILL<br>Falling 1500                   |                 | <input type="checkbox"/> AUTO HAMMER<br><input checked="" type="checkbox"/> MANUAL HAMMER |                   |         |
| 4. NAME OF DRILLER<br>Charlie Brown   |       |        |   |           | 12. TOTAL SAMPLES<br>1  |                 | DISTURBED<br>0  |                   |         |
| 5. DIRECTION OF BORING<br><input checked="" type="checkbox"/> VERTICAL<br><input type="checkbox"/> INCLINED |       |        |   |           | 13. TOTAL NUMBER CORE BOXES<br>1  |                 | 14. ELEVATION GROUND WATER<br>5.9 Ft.   |                   |         |
| 6. THICKNESS OF OVERBURDEN<br>N/A   |       |        |   |           | 15. DATE BORING<br>03-21-11   |                 | STARTED<br>03-21-11   |                   |         |
| 7. DEPTH DRILLED INTO ROCK<br>N/A   |       |        |   |           | 16. ELEVATION TOP OF BORING<br>14.1 Ft.                                   |                 | 17. TOTAL RECOVERY FOR BORING<br>79 %   |                   |         |
| 8. TOTAL DEPTH OF BORING<br>14.0 Ft.  |       |        |   |           | 18. SIGNATURE AND TITLE OF INSPECTOR<br>Michael Fitzharris, Geologist     |                 |   |                   |         |
| ELEV.   | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS   | %<br>REC. | BOX<br>OR<br>SAMPLE   | ROD<br>OR<br>UD | REMARKS   | BLOWS/<br>0.5 FT. | N-VALUE |
| 14.1  | 0.0   |        | FILL, sandy, some silt, trace clay, trace organics; trace shells          | 80        |   |                 | 14.1  | 7                 | 0       |
|   |       |        |   |           |   |                 | SPT Sampler   | 28                | 72      |
|   |       |        |   |           |   |                 | 12.6  | 44                |         |
|   |       |        |   | 60        |   |                 | SPT Sampler   | 7                 | 50      |
|   |       |        |   |           |   |                 | 11.1  | 16                |         |
|   |       |        |   |           |   |                 |   | 34                |         |
|   |       |        |   | 100       |   |                 | SPT Sampler   | 50                |         |
|   |       |        |   |           |   |                 | 9.6   | 5                 | 5       |
| 9.2   | 4.9   |        | CLAY, organic-H, moist, some fibrous material (OH)                        | 57        |   |                 | SPT Sampler   | 3                 | 5       |
|   |       |        |   |           |   |                 | 8.1   | 2                 |         |
|   |       |        |   | 100       |   |                 | SPT Sampler   | 1                 | 6       |
| 6.9   | 7.2   |        | CLAY, fat, trace organics (CH)  |           |   |                 | 6.6   | 2                 |         |
| 6.6   | 7.5   |        | CLAY, organic-H, low plasticity, some clay; some gravel; little sand (OH) | 69        |   |                 | SPT Sampler   | 4                 | 70+     |
|   |       |        |   |           |   |                 | 5.3   | 5                 |         |
| 5.3   | 8.8   |        | LIMESTONE, moderately hard, vuggy, some sandy clay infills                |           |   |                 |   | 20                |         |
|   |       |        |   | 90        | BOX   | ROD             | 4 x 5-1/2"<br>DT = 15 mins<br>HP = 200 psi<br>DFR = 50 %                                  | 50/0.3'           | 10      |
|   |       |        |   |           | 1   | 65              |   |                   |         |
| 0.1   | 14.0  |        |   |           |   |                 | 0.1'  |                   |         |
| NOTES:  |       |        |   |           | 140# hammer w/30" drop used with 2.0' split spoon (1-3/8" I.D. x 2" O.D.) |                 |   |                   |         |

| DRILLING LOG (Cont. Sheet)                      |       |        | INSTALLATION<br>Jacksonville District  |            |                     | SHEET 2<br>OF 7 SHEETS |  |                    |         |
|---|-------|--------|--|------------|---------------------|------------------------|--|--------------------|---------|
| PROJECT<br>C&SF CERP WCA 3 DECOMP Part 2        |       |        | COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. Ft.)   |            | HORIZONTAL<br>NAD83 | VERTICAL<br>NAVD88     |  |                    |         |
| LOCATION COORDINATES<br>X = 738,282 Y = 726,446 |       |        | ELEVATION TOP OF BORING<br>14.1 FT.  |            |                     |                        |  |                    |         |
| ELEV.   | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS  | W.<br>REC. | BOX<br>OR<br>SAMPLE | ROD<br>UP<br>DOWN      | REMARKS  | BLOWS/<br>U.S. FT. | N-VALUE |
|   |       |        | 1. USACE Jacksonville is the custodian for these original files.<br>2. Soils are field visually classified in accordance with the Unified Soils Classification System.<br>3. Grout |            |                     |                        | Abbreviations:<br>DT = Drill Time<br>HP = Hydraulic Pressure<br>DFR = Drill Fluid Return |                    |         |

| DRILLING LOG  |       | DIVISION<br>South Atlantic                      |  | INSTALLATION<br>Jacksonville District                      |                     | SHEET 1<br>OF 2 SHEETS  |             |                   |         |
|---|-------|---|--|--|---------------------|---|-------------|-------------------|---------|
| 1. PROJECT<br>C&SF CERP WCA 3 DECOMP Part 2<br>L-5 South  |       |   |  | 9. SIZE AND TYPE OF BIT See Remarks                        |                     |   |             |                   |         |
| 2. BORING DESIGNATION<br>CP11-DCOMP-CB-0032   |       | LOCATION COORDINATES<br>X = 734,280 Y = 726,400 |  | 10. COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. Ft.) |                     | HORIZONTAL<br>NAD83<br>VERTICAL<br>NAVD88   |             |                   |         |
| 3. DRILLING AGENCY<br>Corps of Engineers - CESAJ  |       | CONTRACTOR FILE NO.                             |  | 11. MANUFACTURER'S DESIGNATION OF DRILL<br>Falling 1500    |                     | <input type="checkbox"/> AUTO HAMMER<br><input checked="" type="checkbox"/> MANUAL HAMMER |             |                   |         |
| 4. NAME OF DRILLER<br>Charlie Brown   |       |   |  | 12. TOTAL SAMPLES<br>0                                     |                     | DISTURBED<br>0<br>UNDISTURBED (U0)<br>0   |             |                   |         |
| 5. DIRECTION OF BORING<br><input checked="" type="checkbox"/> VERTICAL<br><input type="checkbox"/> INCLINED |       | DEG. FROM<br>VERTICAL                           |  | BEARING  |                     | 13. TOTAL NUMBER CORE BOXES 1   |             |                   |         |
| 6. THICKNESS OF OVERBURDEN N/A  |       | 7. DEPTH DRILLED INTO ROCK N/A                  |  | 8. TOTAL DEPTH OF BORING 25.5 Ft.                          |                     | 14. ELEVATION GROUND WATER 7.7 Ft.  |             |                   |         |
|   |       |   |  |  |                     | 15. DATE BORING<br>STARTED 03-21-11<br>COMPLETED 03-21-11                                 |             |                   |         |
|   |       |   |  |  |                     | 16. ELEVATION TOP OF BORING 14.9 Ft.  |             |                   |         |
|   |       |   |  |  |                     | 17. TOTAL RECOVERY FOR BORING 73 %  |             |                   |         |
|   |       |   |  |  |                     | 18. SIGNATURE AND TITLE OF INSPECTOR<br>Michael Fitzharris, Geologist                     |             |                   |         |
| ELEV.   | DEPTH | LEGEND  | CLASSIFICATION OF MATERIALS  | %<br>REC.  | BOX<br>OR<br>SAMPLE | RCD<br>OR<br>UD   | REMARKS     | BLOWS/<br>0.5 FT. | N-VALUE |
| 14.9  | 0.0   |   | FILL, gravelly, trace organics, 7.5YR 7/1 light gray   | 73   |                     |   | 14.9        | 12                | 0       |
|   |       |   |  |  |                     |   | SPT Sampler | 42                | 67      |
|   |       |   |  |  |                     |   | 13.4        | 25                |         |
|   |       |   | From El. 13.4 to 8.3 Ft., sandy, little gravel; trace organics, 10YR 6/2 light brownish gray | 80   |                     |   |             | 5                 | 15      |
|   |       |   |  |  |                     |   | SPT Sampler | 7                 |         |
|   |       |   |  |  |                     |   | 11.9        | 8                 |         |
|   |       |   |  |  |                     |   | SPT Sampler | 9                 | 13      |
|   |       |   |  |  |                     |   | 10.4        | 6                 |         |
|   |       |   |  |  |                     |   | SPT Sampler | 4                 | 5       |
|   |       |   |  |  |                     |   | 8.9         | 2                 |         |
|   |       |   |  |  |                     |   | SPT Sampler | 3                 |         |
| 8.6   | 6.3   |   | CLAY, organic-H, medium plasticity, some fibrous material, 5Y 2.5/1 black (OH)               | 93   |                     |   |             | 1                 | 5       |
|   |       |   |  |  |                     |   | SPT Sampler | 1                 |         |
| 7.4   | 7.5   |   | SAND, clayey, wet, 10YR 6/1 gray (SC)  | 53   |                     |   |             | 4                 | 10      |
|   |       |   |  |  |                     |   | SPT Sampler | 2                 |         |
|   |       |   |  |  |                     |   | 5.9         | 8                 |         |
|   |       |   |  |  |                     |   | SPT Sampler | 4                 | 14      |
|   |       |   | SAND, silty, wet, trace gravel, organic odor, 10YR 3/2 very dark grayish brown (SM)          | 60   |                     |   |             | 5                 |         |
|   |       |   |  |  |                     |   | 4.4         | 9                 | 15      |
|   |       |   |  |  |                     |   | SPT Sampler | 8                 |         |
|   |       |   |  |  |                     |   | 2.9         | 7                 |         |
|   |       |   |  |  |                     |   | SPT Sampler | 5                 | 13      |
|   |       |   |  |  |                     |   | 1.4         | 8                 |         |
|   |       |   |  |  |                     |   | SPT Sampler | 5                 | 13      |
|   |       |   |  |  |                     |   | 60          | 6                 |         |
|   |       |   |  |  |                     |   | SPT Sampler | 6                 |         |
|   |       |   |  |  |                     |   | -0.1        | 7                 | 15      |

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(Continued)



| DRILLING LOG (Cont. Sheet)                      |       |        | INSTALLATION<br>Jacksonville District  |           | SHEET 2<br>OF 2 SHEETS |                    |   |                   |         |
|---|-------|--------|--|-----------|------------------------|--------------------|---|-------------------|---------|
| PROJECT<br>C&SF CERP WCA 3 DECOMP Part 2        |       |        | COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. Ft.)   |           | HORIZONTAL<br>NAD83    | VERTICAL<br>NAVD88 |   |                   |         |
| LOCATION COORDINATES<br>X = 734,280 Y = 726,400 |       |        | ELEVATION TOP OF BORING<br>14.9 Ft.  |           |                        |                    |   |                   |         |
| ELEV.   | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS  | %<br>REC. | ROCK OR<br>SAMPLE      | ROD<br>UP          | REMARKS   | BLOWS/<br>0.5 FT. | N-VALUE |
|   |       |        |  | 63        |                        |                    | -1.1 SPT Sampler  | 3<br>5            | 12+     |
|   |       |        |  | 53        |                        |                    | -3.1 SPT Sampler  | 7/0.0'<br>4<br>4  | 8       |
| -3.1  | 18.0  |        | SAND, poorly-graded with silt, some shell fragments, organic odor, 2.5Y 6/2 light brownish gray (SP-SM)  | 67        |                        |                    | -4.6 SPT Sampler  | 5<br>8<br>9       | 17      |
| -4.6  | 19.5  |        | SAND, silty, some shell fragments, organic odor, 10YR 7/1 light gray (SM)  | 67        |                        |                    | -6.1 SPT Sampler  | 8<br>10<br>7      | 17      |
|   |       |        |  | 63        |                        |                    | -7.6 SPT Sampler  | 6<br>4<br>3       | 7       |
|   |       |        |  | 27        |                        |                    | -9.1 SPT Sampler  | 3<br>3<br>7       | 10      |
| -10.6   | 25.5  |        |  | 20        |                        |                    | -10.6 SPT Sampler   | 2<br>3<br>4       | 7       |
|   |       |        | NOTES:<br>1. USACE Jacksonville is the custodian for these original files.<br>2. Soils are field visually classified in accordance with the Unified Soils Classification System.<br>3. Grout |           |                        |                    | 140# hammer w/30" drop used with 2.0' split spoon (1-3/8" I.D. x 2" O.D.) |                   |         |

| DRILLING LOG  |       | DIVISION<br>South Atlantic                      |   | INSTALLATION<br>Jacksonville District                      |                     | SHEET 1<br>OF 2 SHEETS  |   |                   |         |
|---|-------|---|---|--|---------------------|---|---|-------------------|---------|
| 1. PROJECT<br>C&SF CERP WCA 3 DECOMP Part 2<br>S-8 Area, Proposed Pump Station                              |       |   |   | 9. SIZE AND TYPE OF BIT See Remarks                        |                     |   |   |                   |         |
| 2. BORING DESIGNATION<br>CP11-DCOMP-CB-0034   |       | LOCATION COORDINATES<br>X = 730,243 Y = 726,191 |   | 10. COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. Ft.) |                     | HORIZONTAL<br>NAD83<br>VERTICAL<br>NAVD88   |   |                   |         |
| 3. DRILLING AGENCY<br>Corps of Engineers - CESAM  |       | CONTRACTOR FILE NO.                             |   | 11. MANUFACTURER'S DESIGNATION OF DRILL<br>Falling 1500    |                     | <input type="checkbox"/> AUTO HAMMER<br><input checked="" type="checkbox"/> MANUAL HAMMER |   |                   |         |
| 4. NAME OF DRILLER<br>Charlie Brown   |       |   |   | 12. TOTAL SAMPLES<br>1                                     |                     | DISTURBED<br>0<br>UNDISTURBED (U0)  |   |                   |         |
| 5. DIRECTION OF BORING<br><input checked="" type="checkbox"/> VERTICAL<br><input type="checkbox"/> INCLINED |       | DEG. FROM<br>VERTICAL                           |   | BEARING  |                     | 13. TOTAL NUMBER CORE BOXES<br>1  |   |                   |         |
| 6. THICKNESS OF OVERBURDEN<br>N/A   |       | 7. DEPTH DRILLED INTO ROCK<br>N/A               |   | 8. TOTAL DEPTH OF BORING<br>13.8 Ft.                       |                     | 14. ELEVATION GROUND WATER<br>8.5 Ft.   |   |                   |         |
|   |       |   |   |  |                     | 15. DATE BORING<br>STARTED 03-16-11<br>COMPLETED 03-16-11                                 |   |                   |         |
|   |       |   |   |  |                     | 16. ELEVATION TOP OF BORING<br>15.8 Ft.   |   |                   |         |
|   |       |   |   |  |                     | 17. TOTAL RECOVERY FOR BORING<br>76 %   |   |                   |         |
|   |       |   |   |  |                     | 18. SIGNATURE AND TITLE OF INSPECTOR<br>Michael Fitzharris, Geologist                     |   |                   |         |
| ELEV.   | DEPTH | LEGEND  | CLASSIFICATION OF MATERIALS   | %<br>REC.  | BOX<br>OR<br>SAMPLE | RQD<br>OR<br>UD   | REMARKS   | BLOWS/<br>0.5 FT. | N-VALUE |
| 15.8  | 0.0   |   | SAND, silty, trace coarse grain sand and fine gravel; trace organics and roots in top 6 inches, 2.5Y 4/1 dark gray (SM) | 73   |                     |   | 15.8  | 4                 | 0       |
|   |       |   |   |  |                     |   | SPT Sampler   | 16                | 42      |
|   |       |   |   |  |                     |   | 14.3  | 26                |         |
|   |       |   |   | 60   |                     |   | SPT Sampler   | 2                 | 27      |
|   |       |   |   |  |                     |   | 12.8  | 10                |         |
|   |       |   |   |  |                     |   |   | 17                |         |
|   |       |   |   | 83   |                     |   | SPT Sampler   | 14                | 61      |
|   |       |   |   |  |                     |   | 11.3  | 47                |         |
| 11.3  | 4.5   |   | CLAY, organic-H, strong reaction with HCl, 2.5Y 2.5/1 black (OH)  | 73   |                     |   |   | 3                 | 5       |
|   |       |   | From El. 9.9 to 8.3 Ft., trace calcareous gravel  |  |                     |   | SPT Sampler   | 3                 | 4       |
|   |       |   |   |  |                     |   | 9.8   | 1                 |         |
|   |       |   |   | 80   |                     |   | SPT Sampler   | 2                 | 5       |
|   |       |   |   |  |                     |   | 8.3   | 3                 |         |
| 8.3   | 7.5   |   | SAND, silty, some gravel, 5Y 5/1 gray (SM)  | 53   |                     |   |   | 3                 | 59      |
|   |       |   |   |  |                     |   | SPT Sampler   | 9                 |         |
|   |       |   |   |  |                     |   | 6.8   | 50                |         |
| 6.8   | 9.0   |   | LIMESTONE, fossiliferous, moderately weathered, soft sandy pockets; yuggy, 10YR 7/1 light gray                          | 90   | BOX                 | RQD<br>1 77   |   |                   | 10      |
|   |       |   |   |  |                     |   | DT = 11 mins<br>HP = 200 psi<br>DFR = 100 %                                   |                   |         |
|   |       |   |   |  |                     |   | 2.0   |                   |         |
| 2.0   | 13.8  |   | NOTES:<br>1. USACE Jacksonville is the custodian for  |  |                     |   | 140# hammer w/30" drop used with<br>2.0' split spoon (1-3/8" I.D. x 2" O.D.). |                   | 15      |

| DRILLING LOG (Cont. Sheet)                      |       |        | INSTALLATION<br>Jacksonville District   |            |                     | SHEET 2<br>OF 7 SHEETS |   |                   |         |
|---|-------|--------|---|------------|---------------------|------------------------|---|-------------------|---------|
| PROJECT<br>C&SF CERP WCA 3 DECOMP Part 2        |       |        | COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. Ft.)  |            | HORIZONTAL<br>NAD83 | VERTICAL<br>NAVD88     |   |                   |         |
| LOCATION COORDINATES<br>X = 730,243 Y = 726,191 |       |        | ELEVATION TOP OF BORING<br>15.8 Ft.   |            |                     |                        |   |                   |         |
| ELEV.   | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS   | W.<br>REC. | BOX<br>OR<br>SAMPLE | ROD<br>UP<br>DOWN      | REMARKS   | BLOWS/<br>5.5 FT. | N-VALUE |
|   |       |        | these original files.<br><br>2. Soils are field visually classified in accordance with the Unified Soils Classification System.<br><br>3. Grout |            |                     |                        | Abbreviations:<br>DT = Drill Time.<br>HP = Hydraulic Pressure.<br>DFR = Drill Fluid Return. |                   |         |



| DRILLING LOG (Cont. Sheet)                      |       |        | INSTALLATION<br>Jacksonville District   |            |                     | SHEET 2<br>OF 7 SHEETS |  |                   |         |
|---|-------|--------|---|------------|---------------------|------------------------|--|-------------------|---------|
| PROJECT<br>C&SF CERP WCA 3 DECOMP Part 2        |       |        | COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. Ft.)  |            | HORIZONTAL<br>NAD83 | VERTICAL<br>NAVD88     |  |                   |         |
| LOCATION COORDINATES<br>X = 729,500 Y = 726,555 |       |        | ELEVATION TOP OF BORING<br>13.5 FT.   |            |                     |                        |  |                   |         |
| ELEV.   | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS   | W.<br>REC. | BOX<br>OR<br>SAMPLE | ROD<br>UP<br>DOWN      | REMARKS  | BLOWS/<br>5.5 FT. | N-VALUE |
|   |       |        | these original files.<br><br>2. Soils are field visually classified in accordance with the Unified Soils Classification System.<br><br>3. Grout |            |                     |                        | Abbreviations:<br>DT = Drill Time<br>HP = Hydraulic Pressure<br>DFR = Drill Fluid Return |                   |         |

| DRILLING LOG  |       | DIVISION<br>South Atlantic                      |   | INSTALLATION<br>Jacksonville District                                 |                     | SHEET 1<br>OF 2 SHEETS  |              |                   |         |
|---|-------|---|---|---|---------------------|---|--------------|-------------------|---------|
| 1. PROJECT<br>C&SF CERP WCA 3 DECOMP Part 2<br>L-4 North, Proposed Pump Station                             |       |   |   | 5. SIZE AND TYPE OF BIT<br>See Remarks                                |                     |   |              |                   |         |
| 2. BORING DESIGNATION<br>CP11-DCOMP-CB-0036   |       | LOCATION COORDINATES<br>X = 710,800 Y = 726,372 |   | 10. COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. Ft.)            |                     | HORIZONTAL<br>NAD83<br>VERTICAL<br>NAVD88   |              |                   |         |
| 3. DRILLING AGENCY<br>Corps of Engineers - CESAM  |       | CONTRACTOR FILE NO.                             |   | 11. MANUFACTURER'S DESIGNATION OF DRILL<br>Falling 1500               |                     | <input type="checkbox"/> AUTO HAMMER<br><input checked="" type="checkbox"/> MANUAL HAMMER |              |                   |         |
| 4. NAME OF DRILLER<br>Charlie Brown   |       |   |   | 12. TOTAL SAMPLES<br>1  |                     | DISTURBED<br>0<br>UNDISTURBED (U0)  |              |                   |         |
| 5. DIRECTION OF BORING<br><input checked="" type="checkbox"/> VERTICAL<br><input type="checkbox"/> INCLINED |       |   |   | 13. TOTAL NUMBER CORE BOXES<br>1                                      |                     | 14. ELEVATION GROUND WATER<br>9.0 Ft.   |              |                   |         |
| 6. THICKNESS OF OVERBURDEN<br>N/A   |       |   |   | 15. DATE BORING<br>03-15-11   |                     | STARTED<br>03-15-11<br>COMPLETED  |              |                   |         |
| 7. DEPTH DRILLED INTO ROCK<br>N/A   |       |   |   | 16. ELEVATION TOP OF BORING<br>16.6 Ft.                               |                     | 17. TOTAL RECOVERY FOR BORING<br>69 %   |              |                   |         |
| 8. TOTAL DEPTH OF BORING<br>22.7 Ft.  |       |   |   | 18. SIGNATURE AND TITLE OF INSPECTOR<br>Michael Fitzharris, Geologist |                     |   |              |                   |         |
| ELEV.   | DEPTH | LEGEND  | CLASSIFICATION OF MATERIALS   | %<br>REC.   | BOX<br>OR<br>SAMPLE | RCD<br>OR<br>UD   | REMARKS      | BLOWS/<br>0.5 FT. | N-VALUE |
| 16.6  | 0.0   |   | FILL, fine grained sand with some fine and coarse grained gravel; trace clay, 2.5YR 6/2 pale red                        | 73  |                     |   | 16.6         | 8                 | 31      |
|   |       |   |   |   |                     |   | SPT Sampler  | 15                |         |
|   |       |   |   |   |                     |   | 15.1         | 4                 |         |
|   |       |   |   |   |                     |   | SPT Sampler  | 7                 |         |
| 13.6  | 3.0   |   | SAND, clayey, some fine gravel; trace silt, 5Y 4/1 dark gray (SC)   | 60  |                     |   | 13.6         | 9                 | 16      |
|   |       |   |   |   |                     |   | SPT Sampler  | 5                 |         |
|   |       |   |   |   |                     |   | 12.1         | 3                 |         |
|   |       |   |   |   |                     |   | SPT Sampler  | 3                 |         |
| 10.6  | 6.0   |   | CLAY, organic-L, moist, organic soil with calcareous sand and gravel particles, 5Y 2.5/1 black (OL)                     | 80  |                     |   | 10.6         | 5                 | 8       |
|   |       |   |   |   |                     |   | SPT Sampler  | 3                 |         |
|   |       |   |   |   |                     |   | 12.1         | 3                 |         |
|   |       |   |   |   |                     |   | SPT Sampler  | 3                 |         |
| 9.1   | 7.5   |   | SAND, clayey, moist, calcareous sand and gravel fragments, 7.5YR 2.5/1 black (SC)                                       | 73  |                     |   | 9.1          | 5                 | 8       |
|   |       |   |   |   |                     |   | SPT Sampler  | 3                 |         |
|   |       |   |   |   |                     |   | 10.6         | 5                 |         |
|   |       |   |   |   |                     |   | SPT Sampler  | 3                 |         |
| 7.1   | 9.5   |   | CLAY, lean, moist, some calcareous gravel; little organics, 10YR 4/1 dark gray (CL)                                     | 87  |                     |   | 7.1          | 2                 | 2       |
|   |       |   |   |   |                     |   | SPT Sampler  | 1                 |         |
|   |       |   |   |   |                     |   | 9.1          | 1                 |         |
|   |       |   |   |   |                     |   | SPT Sampler  | 1                 |         |
| 6.1   | 10.5  |   | SAND, clayey, trace gravel, trace silt, 2.5Y 6/1 gray (SC)  | 63  |                     |   | 6.1          | WOH               | 2       |
|   |       |   |   |   |                     |   | SPT Sampler  | 1                 |         |
|   |       |   |   |   |                     |   | 7.6          | 1                 |         |
|   |       |   |   |   |                     |   | SPT Sampler  | 2                 |         |
| 4.6   | 12.0  |   | CLAY, lean, moist, some calcareous gravel; little organics, 10YR 4/1 dark gray (CL)                                     | 93  |                     |   | 4.6          | 2                 | 5       |
|   |       |   |   |   |                     |   | SPT Sampler  | 1                 |         |
|   |       |   |   |   |                     |   | 6.1          | 4                 |         |
|   |       |   |   |   |                     |   | SPT Sampler  | 4                 |         |
| 3.1   | 13.5  |   | SAND, clayey, trace gravel, trace silt, 2.5Y 6/1 gray (SC)  | 87  |                     |   | 3.1          | 2                 | 6       |
|   |       |   |   |   |                     |   | SPT Sampler  | 2                 |         |
|   |       |   |   |   |                     |   | 4.6          | 4                 |         |
|   |       |   |   |   |                     |   | SPT Sampler  | 4                 |         |
|   |       |   | SAND, silty, some coarse gravel, 2.5Y 6/1 gray (SM)   | 40  |                     |   |              | 2                 | 20      |
|   |       |   |   |   |                     |   | SPT Sampler  | 4                 |         |
|   |       |   |   |   |                     |   | 3.1          | 16                |         |
|   |       |   |   |   |                     |   | SPT Sampler  | 16                |         |
|   |       |   | LIMESTONE, fossiliferous, weathered, moderately fractured, vuggy, glauconitic staining; some clay infills, 5Y 8/1 white | 85  | BOX                 | RCD   | 4 x 5-1/2"   |                   | 15      |
|   |       |   |   |   |                     |   | DT = 9 mins  |                   |         |
|   |       |   |   |   |                     |   | HP = 200 psi |                   |         |
|   |       |   |   |   |                     |   | DFR = 100 %  |                   |         |

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| DRILLING LOG (Cont. Sheet)                      |       |  | INSTALLATION<br>Jacksonville District                  |           | SHEET 2<br>OF 2 SHEETS |                    |   |                   |         |
|---|-------|--|--|-----------|------------------------|--------------------|---|-------------------|---------|
| PROJECT<br>C&SF CERP WCA 3 DECOMP Part 2        |       |  | COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. Ft.) |           | HORIZONTAL<br>NAD83    | VERTICAL<br>NAVD88 |   |                   |         |
| LOCATION COORDINATES<br>X = 710,800 Y = 726,372 |       |  | ELEVATION TOP OF BORING<br>16.6 Ft.                    |           |                        |                    |   |                   |         |
| ELEV.   | DEPTH | LEGEND   | CLASSIFICATION OF MATERIALS                            | %<br>REC. | BOX<br>OR<br>SAMPLE    | ROD<br>OR<br>UP    | REMARKS   | BLOWS/<br>0.3 FT. | N-VALUE |
| -6.1  | 22.7  |  |  | 65        |                        | ROD<br>32          | 4 x 5-1/2"<br>DT = 9 mins<br>HP = 200 psi<br>DFR = 100 %  |                   |         |
|   |       |  |  |           |                        |                    | -0.3  |                   |         |
|   |       |  |  | 40        | 1                      | ROD<br>11          | 4 x 5-1/2"<br>DT = 5 mins<br>HP = 200 psi<br>DFR = 70 %   |                   |         |
|   |       |  |  |           |                        |                    | -6.1  |                   |         |
|   |       | NOTES:<br>1. USACE Jacksonville is the custodian for these original files.<br>2. Soils are field visually classified in accordance with the Unified Soils Classification System.<br>3. Grout |  |           |                        |                    | 140# hammer w/30" drop used with 2.0' split spoon (1-3/8" I.D. x 2" O.D.)<br><br>Abbreviations:<br>WOH = Weight of Hammer.<br>DT = Drill Time.<br>HP = Hydraulic Pressure.<br>DFR = Drill Fluid Return. |                   |         |

| DRILLING LOG  |       | DIVISION<br>South Atlantic                      |   | INSTALLATION<br>Jacksonville District                      |                     | SHEET 1<br>OF 2 SHEETS  |         |                   |         |
|---|-------|---|---|--|---------------------|---|---------|-------------------|---------|
| 1. PROJECT<br>C&SF CERP WCA 3 DECOMP Part 2<br>L-4 South, Proposed Pump Station Alternate                   |       |   |   | 5. SIZE AND TYPE OF BIT<br>See Remarks                     |                     |   |         |                   |         |
| 2. BORING DESIGNATION<br>CP11-DCOMP-CB-0037   |       | LOCATION COORDINATES<br>X = 710,839 Y = 726,167 |   | 10. COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. Ft.) |                     | HORIZONTAL<br>NAD83   |         |                   |         |
| 3. DRILLING AGENCY<br>Corps of Engineers - CESAM  |       | CONTRACTOR FILE NO.                             |   | 11. MANUFACTURER'S DESIGNATION OF DRILL<br>Falling 1500    |                     | <input type="checkbox"/> AUTO HAMMER<br><input checked="" type="checkbox"/> MANUAL HAMMER |         |                   |         |
| 4. NAME OF DRILLER<br>Charlie Brown   |       |   |   | 12. TOTAL SAMPLES<br>1                                     |                     | DISTURBED<br>0  |         |                   |         |
| 5. DIRECTION OF BORING<br><input checked="" type="checkbox"/> VERTICAL<br><input type="checkbox"/> INCLINED |       |   |   | 13. TOTAL NUMBER CORE BOXES<br>1                           |                     | 14. ELEVATION GROUND WATER<br>8.3 Ft.   |         |                   |         |
| 6. THICKNESS OF OVERBURDEN<br>N/A   |       |   |   | 15. DATE BORING<br>03-22-11                                |                     | STARTED<br>03-22-11   |         |                   |         |
| 7. DEPTH DRILLED INTO ROCK<br>N/A   |       |   |   | 16. ELEVATION TOP OF BORING<br>20.0 Ft.                    |                     | COMPLETED<br>03-22-11   |         |                   |         |
| 8. TOTAL DEPTH OF BORING<br>20.7 Ft.  |       |   |   | 17. TOTAL RECOVERY FOR BORING<br>61 %                      |                     | 18. SIGNATURE AND TITLE OF INSPECTOR<br>Michael Fitzharris, Geologist                     |         |                   |         |
| ELEV.   | DEPTH | LEGEND  | CLASSIFICATION OF MATERIALS   | %<br>REC.  | BOX<br>OR<br>SAMPLE | RQD<br>OR<br>UD   | REMARKS | BLOWS/<br>0.5 FT. | N-VALUE |
| 20.0  | 0.0   |   | FILL, gravelly, trace organics; trace clay; trace roots; some shell fragments, 5YR 7/1 light gray     | 87   |                     |   | 20.0    | 10                | 0       |
|   |       |   | From El. 18.5 to 14.0 Ft., sandy, trace organics; trace shell fragments, 7.5YR 4/1 dark gray          | 53   |                     |   | 18.5    | 24                | 40      |
|   |       |   |   |  |                     |   | 17.0    | 6                 | 14      |
|   |       |   |   | 67   |                     |   |         | 9                 |         |
|   |       |   |   |  |                     |   | 15.5    | 10                | 23      |
|   |       |   |   | 87   |                     |   |         | 11                | 5       |
|   |       |   |   |  |                     |   | 14.0    | 15                | 36      |
|   |       |   | From El. 14.0 to 12.5 Ft., gravelly, some silt, 7.5YR 5/2 brown                                       | 67   |                     |   |         | 13                |         |
|   |       |   |   |  |                     |   | 12.5    | 10                | 22      |
|   |       |   | From El. 12.5 to 11.0 Ft., sandy, 10YR 5/1 gray   | 0  |                     |   |         | 5                 |         |
|   |       |   |   |  |                     |   | 11.0    | 6                 | 12      |
| 11.0  | 9.0   |   |   |  |                     |   |         | 6                 |         |
| 10.9  | 9.1   |   | SAND, clayey, trace gravel; some shell fragments, 10YR 7/1 light gray (SC)                            |  |                     |   |         | 9                 |         |
| 10.7  | 9.3   |   | CLAY, organic-L, low plasticity, some sand, 10YR 2/1 black (OL)                                       | 80   |                     |   |         | 2                 | 4       |
| 10.5  | 9.5   |   | SAND, silty, some shell fragments, 10YR 7/2 light gray (SM)   |  |                     |   | 9.5     | 2                 |         |
|   |       |   | CLAY, organic-H, some fibrous material, 5YR 2.5/2 dark reddish brown (OH)                             | 100  |                     |   |         | 1                 |         |
|   |       |   |   |  |                     |   | 8.0     | 2                 | 4       |
| 8.0   | 12.0  |   | SAND, silty, 10YR 2/2 very dark brown (SM)  |  |                     |   |         | 2                 |         |
|   |       |   |   | 100  |                     |   |         | woh               |         |
|   |       |   |   |  |                     |   | 6.5     | woh               | 0       |
|   |       |   |   |  |                     |   |         | 2                 |         |
| 5.9   | 14.1  |   | SAND, clayey, some gravel and silt; some shell fragments; trace organics, 10YR 5/2 grayish brown (SC) | 80   |                     |   |         | 7                 | 14      |
|   |       |   |   |  |                     |   | 5.0     | 7                 | 15      |

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| DRILLING LOG (Cont. Sheet)                      |       |        | INSTALLATION<br>Jacksonville District  |           | SHEET 3<br>OF 2 SHEETS  |                    |  |                   |         |
|---|-------|--------|--|-----------|-------------------------|--------------------|--|-------------------|---------|
| PROJECT<br>C&SF CERP WCA 3 DECOMP Part 2        |       |        | COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. Ft.)   |           | HORIZONTAL<br>NAD83     | VERTICAL<br>NAVD88 |  |                   |         |
| LOCATION COORDINATES<br>X = 710,839 Y = 726,167 |       |        | ELEVATION TOP OF BORING<br>20.0 Ft.  |           |                         |                    |  |                   |         |
| ELEV.   | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS  | %<br>REC. | BOX<br>OR<br>SAMP<br>LE | ROD<br>OR<br>UP    | REMARKS  | BLOWS/<br>0.3 FT. | N-VALUE |
| 1.9   | 18.1  |        |  | 69        |                         |                    | SPT Sampler  | 1<br>4<br>50/0.3' | 54+     |
|   |       |        |  | 0         |                         |                    | Advanced Boring  |                   |         |
| -0.7  | 20.7  |        | LIMESTONE, moderately hard, moderately fractured, vuggy, 10YR 7/1 light gray   | 100       | BOX                     | ROD<br>1 42        | 4 x 5-1/2"<br>DT = 11 mins<br>HP = 200 psi<br>DFR = 90 % |                   |         |
| NOTES:  |       |        | 1. USACE Jacksonville is the custodian for these original files.<br>2. Soils are field visually classified in accordance with the Unified Soils Classification System.<br>3. Grout<br>140# hammer w/30" drop used with 2.0' split spoon (1-3/8" I.D. x 2" O.D.).<br>Abbreviations:<br>WOH = Weight of Hammer;<br>DT = Drill Time;<br>HP = Hydraulic Pressure;<br>DFR = Drill Fluid Return. |           |                         |                    |  |                   |         |



Figure G-2-3. Trench Locations along Miami Canal (Wolf WPC, 2009)

| DRILLING LOG  |  | DIVISION<br>South Atlantic                      |  | INSTALLATION<br>Jacksonville District  |  | SHEET 1<br>OF 1 SHEETS   |  |
|---|--|---|--|--|--|--|--|
| 1. PROJECT<br>C&SF CERP WCA 3 DECOMP  |  |   |  | 9. SIZE AND TYPE OF BIT See Remarks  |  |  |  |
| 2. BORING DESIGNATION<br>CP08-DCOMP-TP-0001   |  | LOCATION COORDINATES<br>X = 758.064 Y = 683.851 |  | 10. COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. Ft.)                     |  | HORIZONTAL<br>NAD83<br>VERTICAL<br>NAVD88                                      |  |
| 3. DRILLING AGENCY<br>WPC, Inc.   |  | CONTRACTOR FILE NO.                             |  | 11. MANUFACTURER'S DESIGNATION OF DRILL<br>CAT 320                             |  | <input type="checkbox"/> AUTO HAMMER<br><input type="checkbox"/> MANUAL HAMMER |  |
| 4. NAME OF DRILLER<br>Danny's Backhoe   |  |   |  | 12. TOTAL SAMPLES<br>1   |  | DISTURBED<br>0<br>UNDISTURBED (UD)   |  |
| 5. DIRECTION OF BORING<br><input checked="" type="checkbox"/> VERTICAL<br><input type="checkbox"/> INCLINED |  | DEG. FROM VERTICAL                              |  | 13. TOTAL NUMBER CORE BOXES<br>0   |  |  |  |
| 6. THICKNESS OF OVERBURDEN<br>N/A   |  | BEARING   |  | 14. ELEVATION GROUND WATER<br>Depth 4.0 Ft.                                    |  |  |  |
| 7. DEPTH DRILLED INTO ROCK<br>N/A   |  |   |  | 15. DATE BORING<br>10-18-08  |  | STARTED<br>10-18-08<br>COMPLETED<br>10-18-08                                   |  |
| 8. TOTAL DEPTH OF BORING<br>9.0 Ft.   |  |   |  | 16. ELEVATION TOP OF BORING<br>Not Determined                                  |  |  |  |
|   |  |   |  | 17. TOTAL RECOVERY FOR BORING<br>N/A   |  |  |  |
|   |  |   |  | 18. SIGNATURE AND TITLE OF INSPECTOR<br>Tom Casey, P.E., Geotechnical Engineer |  |  |  |

| ELEV. | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS   | % REC. | BOX OR SAMPLE | ROD OR UD | REMARKS  | BLOWS/1 FT. | N-VALUE |
|-------|-------|--------|---|--------|---------------|-----------|----------|-------------|---------|
| 0.0   | 0.0   |        | GRAVEL, poorly-graded with silt, mostly angular to subangular fine to coarse gravel-sized limestone, few subangular to rounded fine to medium-grained sand-sized quartz, few silt, few angular to subangular fine to medium-grained sand-sized shell, moist, 2.5Y 6/3 light yellowish brown (GP-GM) |        | Bulk          |           |          |             |         |
| 6.5   | 6.5   |        | CLAY, organic-Pt, high plasticity, mostly clay, some organic matter, little silt, wet, (compressed peat), 10YR 3/3 dark brown (OH)  |        |               |           | Test Pit |             |         |
| 9.0   | 9.0   |        | LIMESTONE   |        |               |           |          |             |         |
|       |       |        | NOTES:<br>1. Soils are field visually classified in accordance with the Unified Soils Classification System.  |        |               |           |          |             |         |

## Boring Designation CP08-DCOMP-TP-0002

| DRILLING LOG  |       | DIVISION<br>South Atlantic                      |  | INSTALLATION<br>Jacksonville District  |                  | SHEET 1<br>OF 1 SHEETS   |          |                 |         |
|---|-------|---|--|--|------------------|--|----------|-----------------|---------|
| 1. PROJECT<br>C&SF CERP WCA 3 DECOMP  |       |   |  | 9. SIZE AND TYPE OF BIT<br>See Remarks   |                  |  |          |                 |         |
| 2. BORING DESIGNATION<br>CP08-DCOMP-TP-0002   |       | LOCATION COORDINATES<br>X = 759,269 Y = 682,191 |  | 10. COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. FL.)                     |                  | HORIZONTAL<br>NAD83<br>VERTICAL<br>NAVD88                                      |          |                 |         |
| 3. DRILLING AGENCY<br>WPC, Inc.   |       | CONTRACTOR FILE NO.                             |  | 11. MANUFACTURER'S DESIGNATION OF DRILL<br>CAT 320                             |                  | <input type="checkbox"/> AUTO HAMMER<br><input type="checkbox"/> MANUAL HAMMER |          |                 |         |
| 4. NAME OF DRILLER<br>Danny's Backhoe   |       |   |  | 12. TOTAL SAMPLES<br>2   |                  | DISTURBED<br>0   |          |                 |         |
| 5. DIRECTION OF BORING<br><input checked="" type="checkbox"/> VERTICAL<br><input type="checkbox"/> INCLINED |       |   |  | 13. TOTAL NUMBER CORE BOXES<br>0   |                  | UNDISTURBED (UD)<br>0  |          |                 |         |
| 6. THICKNESS OF OVERBURDEN<br>N/A   |       |   |  | 14. ELEVATION GROUND WATER<br>Depth 4.0 Ft.                                    |                  | 4  |          |                 |         |
| 7. DEPTH DRILLED INTO ROCK<br>N/A   |       |   |  | 15. DATE BORING<br>10-17-08  |                  | STARTED<br>10-17-08<br>COMPLETED<br>10-17-08                                   |          |                 |         |
| 8. TOTAL DEPTH OF BORING<br>8.5 Ft.   |       |   |  | 16. ELEVATION TOP OF BORING<br>Not Determined                                  |                  |  |          |                 |         |
|   |       |   |  | 17. TOTAL RECOVERY FOR BORING<br>N/A   |                  |  |          |                 |         |
|   |       |   |  | 18. SIGNATURE AND TITLE OF INSPECTOR<br>Tom Casey, P.E., Geotechnical Engineer |                  |  |          |                 |         |
| ELEV.   | DEPTH | LEGEND  | CLASSIFICATION OF MATERIALS  | REC.   | BOX OR<br>SAMPLE | RQD<br>OR<br>UD  | REMARKS  | BLOWS/<br>1 FT. | N-VALUE |
| 0   | 0.0   |   | GRAVEL, poorly-graded, mostly angular to subangular fine to coarse gravel-sized limestone, little subangular to rounded fine to medium-grained sand-sized quartz, trace silt, moist. 2.5Y 6/2 light brownish gray (GP) |  |                  |  |          |                 |         |
| 5.5   |       |   |  |  | S-1              |  | Test Pit |                 |         |
| 4.5   |       |   | At 4.5 Ft., some organic matter  |  |                  |  |          |                 |         |
| 5.5   | 5.5   |   | CLAY, organic-H, high plasticity, mostly clay, some organic matter, little silt, wet, (compressed peat), 10YR 3/3 dark brown (OH)  |  |                  |  | Test Pit |                 |         |
| 3   |       |   |  |  |                  |  |          |                 |         |
| 8.5   | 8.5   |   | LIMESTONE  |  |                  |  |          |                 |         |
|   |       |   | NOTES:<br>1. Soils are field visually classified in accordance with the Unified Soils Classification System.   |  |                  |  |          |                 |         |

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Boring Designation CP08-DCOMP-TP-0003

|   |  |                            |  |  |  |  |  |
|---|--|----------------------------|--|--|--|--|--|
| <b>DRILLING LOG</b>   |  | DIVISION<br>South Atlantic |  | INSTALLATION<br>Jacksonville District              |  | SHEET 1<br>OF 1 SHEETS   |  |
| 1. PROJECT<br>C&SF CERP WCA 3 DECOMP  |  |                            |  | 9. SIZE AND TYPE OF BIT See Remarks                |  |  |  |
| 2. BORING DESIGNATION<br>CP08-DCOMP-TP-0003   |  |                            |  | LOCATION COORDINATES<br>X = 760,269 Y = 680,577    |  | 10. COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. FL.)                     |  |
| 3. DRILLING AGENCY<br>WPC, Inc.   |  |                            |  | CONTRACTOR FILE NO.                                |  | HORIZONTAL<br>NAD83  |  |
| 4. NAME OF DRILLER<br>Danny's Backhoe   |  |                            |  | 11. MANUFACTURER'S DESIGNATION OF DRILL<br>CAT 320 |  | VERTICAL<br>NAVD88   |  |
| 5. DIRECTION OF BORING<br><input checked="" type="checkbox"/> VERTICAL<br><input type="checkbox"/> INCLINED |  |                            |  | DEG. FROM VERTICAL                                 |  | BEARING  |  |
| 6. THICKNESS OF OVERBURDEN<br>N/A   |  |                            |  | 12. TOTAL SAMPLES<br>1                             |  | DISTURBED<br>0   |  |
| 7. DEPTH DRILLED INTO ROCK<br>N/A   |  |                            |  | 13. TOTAL NUMBER CORE BOXES<br>0                   |  | 14. ELEVATION GROUND WATER<br>Depth 3.5 Ft.                                    |  |
| 8. TOTAL DEPTH OF BORING<br>8.5 Ft.   |  |                            |  | 15. DATE BORING<br>10-17-08                        |  | STARTED<br>10-17-08  |  |
|   |  |                            |  | 16. ELEVATION TOP OF BORING<br>Not Determined      |  | COMPLETED<br>10-17-08  |  |
|   |  |                            |  | 17. TOTAL RECOVERY FOR BORING<br>N/A               |  | 18. SIGNATURE AND TITLE OF INSPECTOR<br>Tom Casey, P.E., Geotechnical Engineer |  |

| ELEV. | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS  | % REC. | BOX OR SAMPLE | ROD OR UD | REMARKS  | BLOWS/1 FT. | N-VALUE |
|-------|-------|--------|--|--------|---------------|-----------|----------|-------------|---------|
| 0.0   | 0.0   |        | GRAVEL, poorly-graded with silt, mostly angular to subangular fine to coarse gravel-sized limestone, little subangular to rounded fine-grained sand-sized quartz, few angular to subangular boulder-sized limestone, few silt, moist, 2.5Y 5/2 grayish brown (GP-GM) |        |               |           |          |             |         |
| 6.0   | 6.0   |        | CLAY, organic-H, high plasticity, mostly clay, some organic matter, little silt, wet, (compressed peat), 10YR 3/3 dark brown (OH)  |        |               |           | Test Pit |             |         |
| 8.5   | 8.5   |        | LIMESTONE  |        |               |           |          |             |         |
|       |       |        | NOTES:<br>1. Soils are field visually classified in accordance with the Unified Soils Classification System.   |        |               |           |          |             |         |

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Boring Designation CP08-DCOMP-TP-0004

| DRILLING LOG  |  | DIVISION<br>South Atlantic |  | INSTALLATION<br>Jacksonville District  |  | SHEET 1<br>OF 1 SHEETS   |  |
|---|--|----------------------------|--|--|--|--|--|
| 1. PROJECT<br>C&SF CERP WCA 3 DECOMP  |  |                            |  | 9. SIZE AND TYPE OF BIT<br>See Remarks   |  |  |  |
| 2. BORING DESIGNATION<br>CP08-DCOMP-TP-0004   |  |                            |  | 10. COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. Ft.)                     |  | HORIZONTAL<br>NAD83<br>VERTICAL<br>NAVD88                                      |  |
| 3. DRILLING AGENCY<br>WPC, Inc.   |  |                            |  | 11. MANUFACTURER'S DESIGNATION OF DRILL<br>CAT 320                             |  | <input type="checkbox"/> AUTO HAMMER<br><input type="checkbox"/> MANUAL HAMMER |  |
| 4. NAME OF DRILLER<br>Danny's Backhoe   |  |                            |  | 12. TOTAL SAMPLES<br>2   |  | DISTURBED<br>0<br>UNDISTURBED (UD)   |  |
| 5. DIRECTION OF BORING<br><input checked="" type="checkbox"/> VERTICAL<br><input type="checkbox"/> INCLINED |  |                            |  | 13. TOTAL NUMBER CORE BOXES<br>0   |  | 14. ELEVATION GROUND WATER<br>Depth 2.5 Ft.                                    |  |
| 6. THICKNESS OF OVERBURDEN<br>N/A   |  |                            |  | 15. DATE BORING<br>10-17-08  |  | STARTED<br>10-17-08<br>COMPLETED<br>10-17-08                                   |  |
| 7. DEPTH DRILLED INTO ROCK<br>N/A   |  |                            |  | 16. ELEVATION TOP OF BORING<br>Not Determined                                  |  | 17. TOTAL RECOVERY FOR BORING<br>N/A   |  |
| 8. TOTAL DEPTH OF BORING<br>7.0 Ft.   |  |                            |  | 18. SIGNATURE AND TITLE OF INSPECTOR<br>Tom Casey, P.E., Geotechnical Engineer |  |  |  |

| ELEV. | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS   | % REG. | BOX OR SAMPLE | ROD OR UD | REMARKS  | BLOWS/1 FT. | N-VALUE |
|-------|-------|--------|---|--------|---------------|-----------|----------|-------------|---------|
| 0.0   | 0.0   |        | GRAVEL, poorly-graded with silt, mostly angular to subangular fine to coarse gravel-sized limestone, few subangular to rounded fine-grained sand-sized quartz, few boulder-sized limestone, few silt, moist, 2.5Y 6/2 light brownish gray (GP-GM) |        |               |           |          |             |         |
| 4.0   | 4.0   |        | GRAVEL, poorly-graded, mostly angular to subangular fine to coarse gravel-sized limestone, few subangular to rounded fine-grained sand-sized quartz, trace silt, 2.5Y 5/2 grayish brown (GP)  |        |               |           | Test Pit |             |         |
| 6.0   | 6.0   |        | CLAY, organic-H, high plasticity, mostly clay, some organic matter, little silt, wet, (compressed peat), 10YR 3/3 dark brown (OH)   |        |               |           | Test Pit |             |         |
| 7.0   | 7.0   |        | LIMESTONE   |        |               |           |          |             |         |

NOTES:  
1. Soils are field visually classified in accordance with the Unified Soils Classification System.

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Boring Designation CP08-DCOMP-TP-0005

|   |  |   |  |  |  |  |  |
|---|--|---|--|--|--|--|--|
| <b>DRILLING LOG</b>   |  | <b>DIVISION</b><br>South Atlantic               |  | <b>INSTALLATION</b><br>Jacksonville District                                   |  | <b>SHEET 1</b><br>OF 1 SHEETS  |  |
| 1. PROJECT<br>C&SF CERP WCA 3 DECOMP  |  |   |  | 9. SIZE AND TYPE OF BIT See Remarks  |  |  |  |
| 2. BORING DESIGNATION<br>CP08-DCOMP-TP-0005   |  | LOCATION COORDINATES<br>X = 762,724 Y = 677,123 |  | 10. COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. Ft.)                     |  | HORIZONTAL<br>NAD83<br>VERTICAL<br>NAVD88                                      |  |
| 3. DRILLING AGENCY<br>WPC, Inc.   |  | CONTRACTOR FILE NO.                             |  | 11. MANUFACTURER'S DESIGNATION OF DRILL<br>CAT 320                             |  | <input type="checkbox"/> AUTO HAMMER<br><input type="checkbox"/> MANUAL HAMMER |  |
| 4. NAME OF DRILLER<br>Danny's Backhoe   |  |   |  | 12. TOTAL SAMPLES<br>1   |  | DISTURBED<br>0<br>UNDISTURBED (UD)   |  |
| 5. DIRECTION OF BORING<br><input checked="" type="checkbox"/> VERTICAL<br><input type="checkbox"/> INCLINED |  | DEG. FROM VERTICAL                              |  | 13. TOTAL NUMBER CORE BOXES<br>0   |  |  |  |
| 6. THICKNESS OF OVERBURDEN<br>N/A   |  | BEARING   |  | 14. ELEVATION GROUND WATER<br>Depth 3.0 Ft.                                    |  | 3  |  |
| 7. DEPTH DRILLED INTO ROCK<br>N/A   |  |   |  | 15. DATE BORING<br>10-16-08  |  | COMPLETED<br>10-16-08  |  |
| 8. TOTAL DEPTH OF BORING<br>8.0 Ft.   |  |   |  | 16. ELEVATION TOP OF BORING<br>Not Determined                                  |  |  |  |
|   |  |   |  | 17. TOTAL RECOVERY FOR BORING<br>N/A   |  |  |  |
|   |  |   |  | 18. SIGNATURE AND TITLE OF INSPECTOR<br>Tom Casey, P.E., Geotechnical Engineer |  |  |  |

| ELEV. | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS   | % REC. | BOX OR SAMPLE | RQD OR UD | REMARKS  | BLOWS/1 FT. | N-VALUE |
|-------|-------|--------|---|--------|---------------|-----------|----------|-------------|---------|
|       | 0.0   |        | GRAVEL, poorly-graded with silt, mostly angular to subangular fine to coarse gravel-sized limestone, little subangular to rounded fine-grained sand-sized quartz, few silt, moist, 2.5Y 5/2 grayish brown (GP-GM) |        |               |           |          |             |         |
|       | 6.0   |        | CLAY, organic-H, high plasticity, mostly clay, some organic matter, little silt, wet, (compressed peat), 10YR 3/3 dark brown (OH)   |        |               |           | Test Pit |             |         |
|       | 8.0   |        | LIMESTONE   |        |               |           |          |             |         |
|       |       |        | NOTES:<br>1. Soils are field visually classified in accordance with the Unified Soils Classification System.  |        |               |           |          |             |         |

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| DRILLING LOG   |       | DIVISION<br>South Atlantic |   | INSTALLATION<br>Jacksonville District  |               | SHEET 1<br>OF 1 SHEETS   |          |             |         |
|--|-------|----------------------------|---|--|---------------|--|----------|-------------|---------|
| 1. PROJECT<br>C&SF CERP WCA 3 DECOMP   |       |                            |   | 9. SIZE AND TYPE OF BIT See Remarks  |               |  |          |             |         |
| 2. BORING DESIGNATION<br>CP08-DCOMP-TP-0006  |       |                            |   | 10. COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. FL.)                     |               | HORIZONTAL<br>NAD83<br>VERTICAL<br>NAVD88                                      |          |             |         |
| 3. DRILLING AGENCY<br>WPC, Inc.  |       |                            |   | 11. MANUFACTURER'S DESIGNATION OF DRILL<br>CAT 320                             |               | <input type="checkbox"/> AUTO HAMMER<br><input type="checkbox"/> MANUAL HAMMER |          |             |         |
| 4. NAME OF DRILLER<br>Danny's Backhoe  |       |                            |   | 12. TOTAL SAMPLES<br>2   |               | DISTURBED<br>0   |          |             |         |
| 5. DIRECTION OF BORING<br><input checked="" type="checkbox"/> VERTICAL<br><input type="checkbox"/> INCLINED  |       |                            |   | 13. TOTAL NUMBER CORE BOXES<br>0   |               | 14. ELEVATION GROUND WATER<br>Depth 3.0 Ft.                                    |          |             |         |
| 6. THICKNESS OF OVERBURDEN<br>N/A  |       |                            |   | 15. DATE BORING<br>10-16-08  |               | STARTED<br>10-16-08<br>COMPLETED<br>10-16-08                                   |          |             |         |
| 7. DEPTH DRILLED INTO ROCK<br>N/A  |       |                            |   | 16. ELEVATION TOP OF BORING<br>Not Determined                                  |               | 17. TOTAL RECOVERY FOR BORING<br>N/A   |          |             |         |
| 8. TOTAL DEPTH OF BORING<br>8.0 Ft.  |       |                            |   | 18. SIGNATURE AND TITLE OF INSPECTOR<br>Tom Casey, P.E., Geotechnical Engineer |               |  |          |             |         |
| ELEV.  | DEPTH | LEGEND                     | CLASSIFICATION OF MATERIALS   | % REG.   | BOX OR SAMPLE | ROD OR UD  | REMARKS  | BLOWS/1 FT. | N-VALUE |
| 0.0  | 0.0   |                            | GRAVEL, poorly-graded with silt, mostly angular to subangular fine to coarse gravel-sized limestone, little subangular to rounded fine-grained sand-sized quartz, few silt, trace shell, moist, 2.5Y 4/2 dark grayish brown (GP-GM) |  |               |  |          |             |         |
| 0.5  | 3.5   |                            | GRAVEL, silty, mostly angular to subangular fine to coarse gravel-sized limestone, little subangular to rounded fine-grained sand-sized quartz, little silt, trace shell, 2.5Y 3/2 very dark grayish brown (GM)                     |  | S-1           |  | Test Pit |             |         |
| 1.0  | 5.5   |                            | CLAY, organic-H, high plasticity, mostly clay, some organic matter, little silt, wet, (compressed peat), 10YR 3/3 dark brown (OH)   |  | S             |  | Test Pit |             |         |
| 1.5  | 8.0   |                            | LIMESTONE   |  |               |  |          |             |         |
| NOTES:<br>1. Soils are field visually classified in accordance with the Unified Soils Classification System. |       |                            |   |  |               |  |          |             |         |



|   |  |   |  |  |  |  |  |
|---|--|---|--|--|--|--|--|
| <b>DRILLING LOG</b>   |  | DIVISION<br>South Atlantic                      |  | INSTALLATION<br>Jacksonville District  |  | SHEET 1<br>OF 1 SHEETS   |  |
| 1. PROJECT<br>C&SF CERP WCA 3 DECOMP  |  |   |  | 9. SIZE AND TYPE OF BIT See Remarks  |  |  |  |
| 2. BORING DESIGNATION<br>CP08-DCOMP-TP-0007   |  | LOCATION COORDINATES<br>X = 764.997 Y = 673.826 |  | 10. COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. Ft.)                     |  | HORIZONTAL<br>NAD83<br>VERTICAL<br>NAVD88                                      |  |
| 3. DRILLING AGENCY<br>WPC, Inc.   |  | CONTRACTOR FILE NO.                             |  | 11. MANUFACTURER'S DESIGNATION OF DRILL<br>CAT 320                             |  | <input type="checkbox"/> AUTO HAMMER<br><input type="checkbox"/> MANUAL HAMMER |  |
| 4. NAME OF DRILLER<br>Danny's Backhoe   |  |   |  | 12. TOTAL SAMPLES  |  | DISTURBED<br>1<br>UNDISTURBED (UD)<br>0  |  |
| 5. DIRECTION OF BORING<br><input checked="" type="checkbox"/> VERTICAL<br><input type="checkbox"/> INCLINED |  |   |  | 13. TOTAL NUMBER CORE BOXES<br>0   |  | 14. ELEVATION GROUND WATER<br>Depth 3.0 Ft.                                    |  |
| 6. THICKNESS OF OVERBURDEN<br>N/A   |  | DEG. FROM VERTICAL<br>N/A                       |  | 15. DATE BORING<br>10-16-08  |  | STARTED<br>10-16-08<br>COMPLETED<br>10-16-08                                   |  |
| 7. DEPTH DRILLED INTO ROCK<br>N/A   |  | BEARING   |  | 16. ELEVATION TOP OF BORING<br>Not Determined                                  |  | 17. TOTAL RECOVERY FOR BORING<br>N/A   |  |
| 8. TOTAL DEPTH OF BORING<br>7.5 Ft.   |  |   |  | 18. SIGNATURE AND TITLE OF INSPECTOR<br>Tom Casey, P.E., Geotechnical Engineer |  |  |  |

| ELEV. | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS   | REC. | BOX OR SAMPLE | ROD OR UD | REMARKS  | BLOWS/<br>1 FT. | N-VALUE |
|-------|-------|--------|---|------|---------------|-----------|----------|-----------------|---------|
| 0     | 0.0   |        | GRAVEL, poorly-graded, mostly silt, some organic matter, some fine to coarse gravel-sized limestone, few subangular to rounded fine-grained sand-sized quartz, moist, 10YR 3/2 very dark grayish brown (GP) |      |               |           |          |                 |         |
| 5     | 5.0   |        | CLAY, organic-H, high plasticity, mostly clay, some organic matter, little silt, wet, (compressed peat), 10YR 3/3 dark brown (OH)   |      | Bulk          |           | Test Pit |                 |         |
| 7.5   | 7.5   |        | LIMESTONE   |      |               |           |          |                 |         |
|       |       |        | NOTES:<br>1. Soils are field visually classified in accordance with the Unified Soils Classification System.  |      |               |           |          |                 |         |

| DRILLING LOG  |       | DIVISION<br>South Atlantic |   | INSTALLATION<br>Jacksonville District  |               | SHEET 1<br>OF 1 SHEETS |             |
|---|-------|----------------------------|---|--|---------------|------------------------|-------------|
| 1. PROJECT<br>C&SF CERP WCA 3 DECOMP  |       |                            |   | 9. SIZE AND TYPE OF BIT<br>See Remarks   |               |                        |             |
| 2. BORING DESIGNATION<br>CP08-DCOMP-TP-0008   |       |                            |   | 10. COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. Ft.)                     |               |                        |             |
| LOCATION COORDINATES<br>X = 766,247 Y = 672,076   |       |                            |   | HORIZONTAL<br>NAD83  |               |                        |             |
| 3. DRILLING AGENCY<br>WPC, Inc.   |       |                            |   | 11. MANUFACTURER'S DESIGNATION OF DRILL<br>CAT 320                             |               |                        |             |
| CONTRACTOR FILE NO.   |       |                            |   | DISTURBED<br>3   |               |                        |             |
| 4. NAME OF DRILLER<br>Danny's Backhoe   |       |                            |   | UNDISTURBED (UD)<br>0  |               |                        |             |
| 5. DIRECTION OF BORING<br><input checked="" type="checkbox"/> VERTICAL<br><input type="checkbox"/> INCLINED |       |                            |   | 12. TOTAL SAMPLES  |               |                        |             |
| DEG. FROM VERTICAL  |       |                            |   | 13. TOTAL NUMBER CORE BOXES<br>0   |               |                        |             |
| BEARING   |       |                            |   | 14. ELEVATION GROUND WATER<br>Depth 4.0 Ft.                                    |               |                        |             |
| 6. THICKNESS OF OVERBURDEN<br>N/A   |       |                            |   | 15. DATE BORING<br>STARTED 10-16-08<br>COMPLETED 10-16-08                      |               |                        |             |
| 7. DEPTH DRILLED INTO ROCK<br>N/A   |       |                            |   | 16. ELEVATION TOP OF BORING<br>Not Determined                                  |               |                        |             |
| 8. TOTAL DEPTH OF BORING<br>8.0 Ft.   |       |                            |   | 17. TOTAL RECOVERY FOR BORING<br>N/A   |               |                        |             |
|   |       |                            |   | 18. SIGNATURE AND TITLE OF INSPECTOR<br>Tom Casey, P.E., Geotechnical Engineer |               |                        |             |
| ELEV.   | DEPTH | LEGEND                     | CLASSIFICATION OF MATERIALS   | % REC.   | BOX OR SAMPLE | REMARKS                | BLOWS/1 FT. |
| 0.0   |       |                            | GRAVEL, poorly-graded with silt, mostly angular to subangular fine to coarse gravel-sized limestone, little subangular to rounded fine-grained sand-sized quartz, few boulder-sized limestone, few silt, trace shell, moist, 2.5Y 6/3 light yellowish brown (GP-GM) |  |               |                        |             |
| 5.0   |       |                            | SAND, silty, mostly subangular to rounded fine-grained sand-sized quartz, some angular to subangular fine to coarse gravel-sized limestone, little silt, trace shell, 2.5Y 5/2 grayish brown (SM)   |  | S-1           | Test Pit               |             |
| 7.0   |       |                            | CLAY, organic-H, high plasticity, mostly clay, some organic matter, little silt, wet (compressed peat), 10YR 3/3 dark brown (OH)  |  | S-2           | Test Pit               |             |
| 8.0   |       |                            | LIMESTONE   |  | S-3           | Test Pit               |             |
| NOTES<br>1. Soils are field visually classified in accordance with the Unified Soils Classification System. |       |                            |   |  |               |                        |             |

| DRILLING LOG  |       | DIVISION<br>South Atlantic                      |   | INSTALLATION<br>Jacksonville District  |                    | SHEET 1<br>OF 1 SHEETS   |                                  |             |         |
|---|-------|---|---|--|--------------------|--|----------------------------------|-------------|---------|
| 1. PROJECT<br>C&SF CERP WCA 3 DECOMP  |       |   |   | 9. SIZE AND TYPE OF BIT See Remarks  |                    |  |                                  |             |         |
| 2. BORING DESIGNATION<br>CP08-DCOMP-TP-0009   |       | LOCATION COORDINATES<br>X = 767,384 Y = 670,439 |   | 10. COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. Ft.)                     |                    | HORIZONTAL<br>NAD83<br>VERTICAL<br>NAVD88                                      |                                  |             |         |
| 3. DRILLING AGENCY<br>WPC, Inc.   |       | CONTRACTOR FILE NO.                             |   | 11. MANUFACTURER'S DESIGNATION OF DRILL<br>CAT 320                             |                    | <input type="checkbox"/> AUTO HAMMER<br><input type="checkbox"/> MANUAL HAMMER |                                  |             |         |
| 4. NAME OF DRILLER<br>Danny's Backhoe   |       |   |   | 12. TOTAL SAMPLES<br>3   |                    | DISTURBED<br>0<br>UNDISTURBED (UD)   |                                  |             |         |
| 5. DIRECTION OF BORING<br><input checked="" type="checkbox"/> VERTICAL<br><input type="checkbox"/> INCLINED |       |   |   | 13. TOTAL NUMBER CORE BOXES<br>0   |                    | 14. ELEVATION GROUND WATER<br>Depth 3.0 Ft.                                    |                                  |             |         |
| 6. THICKNESS OF OVERBURDEN<br>N/A   |       | DEG. FROM VERTICAL<br>N/A                       |   | 15. DATE BORING<br>10-15-08  |                    | STARTED<br>10-15-08<br>COMPLETED<br>10-15-08                                   |                                  |             |         |
| 7. DEPTH DRILLED INTO ROCK<br>N/A   |       | BEARING   |   | 16. ELEVATION TOP OF BORING<br>Not Determined                                  |                    | 17. TOTAL RECOVERY FOR BORING<br>N/A   |                                  |             |         |
| 8. TOTAL DEPTH OF BORING<br>8.0 Ft.   |       |   |   | 18. SIGNATURE AND TITLE OF INSPECTOR<br>Tom Casey, P.E., Geotechnical Engineer |                    |  |                                  |             |         |
| ELEV.   | DEPTH | LEGEND  | CLASSIFICATION OF MATERIALS   | REC.   | BOX OR SAMPLE      | ROD OR UD  | REMARKS                          | BLOWS/1 FT. | N-VALUE |
| 0.0   | 0.0   |   | GRAVEL, poorly-graded with silt, mostly angular to subangular fine to coarse gravel-sized limestone, few subangular to rounded fine-grained sand-sized quartz, few silt, few angular to subangular fine to medium-grained sand-sized shell, trace organic matter, moist, 2.5Y 5/3 light olive brown (GP-GM) |  |                    |  |                                  |             |         |
| 2.0   | 2.0   |   | SAND, silty, mostly subangular to rounded fine-grained sand-sized quartz, little angular to subangular fine to coarse gravel-sized limestone, little silt, few fine to medium-grained sand-sized shell, trace organic matter, 10YR 2/2 very dark brown (SM)   |  | S-1<br>Bulk<br>S-2 |  | Test Pit<br>Test Pit<br>Test Pit |             |         |
| 8.0   | 8.0   |   | LIMESTONE   |  |                    |  |                                  |             |         |
| NOTES:  |       |   | 1 Soils are field visually classified in accordance with the Unified Soils Classification System.   |  |                    |  |                                  |             |         |

| DRILLING LOG  |       | DIVISION<br>South Atlantic |   | INSTALLATION<br>Jacksonville District  |               | SHEET 1<br>OF 1 SHEETS   |          |             |         |
|---|-------|----------------------------|---|--|---------------|--|----------|-------------|---------|
| 1. PROJECT<br>C&SF CERP WCA 3 DECOMP  |       |                            |   | 9. SIZE AND TYPE OF BIT See Remarks  |               |  |          |             |         |
| 2. BORING DESIGNATION<br>CP08-DCOMP-TP-0010   |       |                            |   | 10. COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. Ft.)                     |               | HORIZONTAL<br>NAD83<br>VERTICAL<br>NAVD88                                      |          |             |         |
| 3. DRILLING AGENCY<br>WPC, Inc.   |       |                            |   | 11. MANUFACTURER'S DESIGNATION OF DRILL<br>CAT 320                             |               | <input type="checkbox"/> AUTO HAMMER<br><input type="checkbox"/> MANUAL HAMMER |          |             |         |
| 4. NAME OF DRILLER<br>Danny's Backhoe   |       |                            |   | 12. TOTAL SAMPLES<br>3   |               | DISTURBED<br>0<br>UNDISTURBED (UD)   |          |             |         |
| 5. DIRECTION OF BORING<br><input checked="" type="checkbox"/> VERTICAL<br><input type="checkbox"/> INCLINED |       |                            |   | 13. TOTAL NUMBER CORE BOXES<br>0   |               | 14. ELEVATION GROUND WATER<br>Depth 4.0 Ft.                                    |          |             |         |
| 6. THICKNESS OF OVERBURDEN<br>N/A   |       |                            |   | 15. DATE BORING<br>10-15-08  |               | STARTED<br>10-15-08<br>COMPLETED<br>10-15-08                                   |          |             |         |
| 7. DEPTH DRILLED INTO ROCK<br>N/A   |       |                            |   | 16. ELEVATION TOP OF BORING<br>Not Determined                                  |               | 17. TOTAL RECOVERY FOR BORING<br>N/A   |          |             |         |
| 8. TOTAL DEPTH OF BORING<br>11.0 Ft.  |       |                            |   | 18. SIGNATURE AND TITLE OF INSPECTOR<br>Tom Casey, P.E., Geotechnical Engineer |               |  |          |             |         |
| ELEV.   | DEPTH | LEGEND                     | CLASSIFICATION OF MATERIALS   | % REC.   | BOX OR SAMPLE | ROD OR UD  | REMARKS  | BLOWS/1 FT. | N-VALUE |
| 0.0   | 0.0   |                            | GRAVEL, silty, mostly angular to subangular fine to coarse gravel-sized limestone, some boulder-sized limestone, little subangular to rounded fine-grained sand-sized quartz, little silt, trace organic matter, moist, 2.5Y 5/2 grayish brown (GM) |  |               |  |          |             |         |
| 4.0   | 4.0   |                            | GRAVEL, poorly-graded with silt, mostly angular to subangular fine to coarse gravel-sized limestone, few subrounded to rounded fine-grained sand-sized quartz, few silt, 2.5Y 5/2 grayish brown (GP-GM)   |  | S-1           |  | Test Pit |             |         |
| 5.5   | 5.5   |                            | CLAY, organic-H, high plasticity, mostly organic matter, some clay, little silt, wet (compressed peat), 10YR 3/3 dark brown (OH)  |  | S-2           |  | Test Pit |             |         |
| 11.0  | 11.0  |                            | LIMESTONE   |  | S-3           |  | Test Pit |             |         |
| NOTES:  |       |                            | 1. Soils are field visually classified in accordance with the Unified Soils Classification System.  |  |               |  |          |             |         |



|   |  |   |  |                               |
|---|--|---|--|-------------------------------|
| <b>DRILLING LOG</b>   |  | <b>DIVISION</b><br>South Atlantic   | <b>INSTALLATION</b><br>Jacksonville District | <b>SHEET 1</b><br>OF 1 SHEETS |
| 1. <b>PROJECT</b><br>C&SF CERP WCA 3 DECOMP   |  | 9. <b>SIZE AND TYPE OF BIT</b> See Remarks  |  |                               |
| 2. <b>BORING DESIGNATION</b><br>CP08-DCOMP-TP-0011  |  | 10. <b>COORDINATE SYSTEM/DATUM</b><br>State Plane, FLE (U.S. Ft.)    NAD83    NAVD88  |  |                               |
| 3. <b>DRILLING AGENCY</b><br>WPC, Inc.  |  | 11. <b>MANUFACTURER'S DESIGNATION OF DRILL</b> <input type="checkbox"/> AUTO HAMMER<br>CAT 320 <input type="checkbox"/> MANUAL HAMMER |  |                               |
| 4. <b>NAME OF DRILLER</b><br>Danny's Backhoe  |  | 12. <b>TOTAL SAMPLES</b> DISTURBED    UNDISTURBED (UD)<br>2    0  |  |                               |
| 5. <b>DIRECTION OF BORING</b><br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED |  | 13. <b>TOTAL NUMBER CORE BOXES</b> 0  |  |                               |
| 6. <b>THICKNESS OF OVERBURDEN</b> N/A   |  | 14. <b>ELEVATION GROUND WATER</b> Depth 3.5 Ft.   |  |                               |
| 7. <b>DEPTH DRILLED INTO ROCK</b> N/A   |  | 15. <b>DATE BORING</b> STARTED    COMPLETED<br>10-15-08    10-15-08   |  |                               |
| 8. <b>TOTAL DEPTH OF BORING</b> 7.0 Ft.   |  | 16. <b>ELEVATION TOP OF BORING</b> Not Determined   |  |                               |
|   |  | 17. <b>TOTAL RECOVERY FOR BORING</b> N/A  |  |                               |
|   |  | 18. <b>SIGNATURE AND TITLE OF INSPECTOR</b><br>Tom Casey, P.E., Geotechnical Engineer   |  |                               |

| ELEV. | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS   | % REC. | BOX OR SAMPLE | ROD OR UD | REMARKS  | BLOWS/1 FT. | N-VALUE |
|-------|-------|--------|---|--------|---------------|-----------|----------|-------------|---------|
|       | 0.0   |        | GRAVEL, poorly-graded with silt, mostly angular to subangular fine to coarse gravel-sized limestone, little subangular to rounded fine-grained sand-sized quartz, few silt, moist, 2.5Y 7/3 pale yellow (GP-GM) |        |               |           |          |             |         |
|       | 5.0   |        | CLAY, organic-H, high plasticity, mostly clay, some organic matter, little silt, wet, (compressed peat), 10YR 3/3 dark brown (OH)   |        |               |           | Test Pit |             |         |
|       | 7.0   |        | LIMESTONE   |        |               |           | Test Pit |             |         |
|       |       |        | NOTES:<br>1. Soils are field visually classified in accordance with the Unified Soils Classification System.  |        |               |           |          |             |         |

Boring Designation CP08-DCOMP-TP-0012

| DRILLING LOG  |  | DIVISION<br>South Atlantic |  | INSTALLATION<br>Jacksonville District  |  | SHEET 1<br>OF 1 SHEETS |  |
|---|--|----------------------------|--|--|--|------------------------|--|
| 1. PROJECT<br>C&SF CERP WCA 3 DECOMP  |  |                            |  | 9. SIZE AND TYPE OF BIT See Remarks  |  |                        |  |
| 2. BORING DESIGNATION<br>CP08-DCOMP-TP-0012   |  |                            |  | 10. COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. Ft.)                     |  |                        |  |
| 3. DRILLING AGENCY<br>WPC, Inc.   |  |                            |  | 11. MANUFACTURER'S DESIGNATION OF DRILL<br>CAT 320                             |  |                        |  |
| 4. NAME OF DRILLER<br>Danny's Backhoe   |  |                            |  | 12. TOTAL SAMPLES<br>4   |  |                        |  |
| 5. DIRECTION OF BORING<br><input checked="" type="checkbox"/> VERTICAL<br><input type="checkbox"/> INCLINED |  |                            |  | 13. TOTAL NUMBER CORE BOXES<br>0   |  |                        |  |
| 6. THICKNESS OF OVERBURDEN<br>N/A   |  |                            |  | 14. ELEVATION GROUND WATER<br>Depth 5.0 Ft.                                    |  |                        |  |
| 7. DEPTH DRILLED INTO ROCK<br>N/A   |  |                            |  | 15. DATE BORING<br>10-14-08  |  |                        |  |
| 8. TOTAL DEPTH OF BORING<br>7.5 Ft.   |  |                            |  | 16. ELEVATION TOP OF BORING<br>Not Determined                                  |  |                        |  |
|   |  |                            |  | 17. TOTAL RECOVERY FOR BORING<br>N/A   |  |                        |  |
|   |  |                            |  | 18. SIGNATURE AND TITLE OF INSPECTOR<br>Tom Casey, P.E., Geotechnical Engineer |  |                        |  |

| ELEV. | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS   | REC. | BOX OR SAMPLE | RQD OR UD | REMARKS  | BLOWS/<br>1 FT. | N-VALUE |
|-------|-------|--------|---|------|---------------|-----------|----------|-----------------|---------|
| 0.0   |       |        | GRAVEL, poorly-graded with silt, mostly angular to subangular fine to coarse gravel-sized limestone, few subangular to rounded fine-grained sand-sized quartz, few silt, few fine to medium-grained sand-sized shell, moist, 2.5Y 6/3 light yellowish brown (GP-GM) |      |               |           |          |                 |         |
|       |       |        |   | S-1  |               |           | Test Pit |                 |         |
|       |       |        |   | S-2  |               |           | Test Pit |                 |         |
|       |       |        |   | S-3  |               |           | Test Pit |                 |         |
| 6.0   |       |        | CLAY, organic-H, high plasticity, mostly organic matter, some clay, little silt, wet, (compressed peat), 10YR 3/3 dark brown (Oh)   |      |               |           | Test Pit |                 |         |
|       |       |        |   | S-4  |               |           | Test Pit |                 |         |
| 7.5   |       |        | LIMESTONE   |      |               |           |          |                 |         |
|       |       |        | NOTES:<br>1. Soils are field visually classified in accordance with the Unified Soils Classification System.  |      |               |           |          |                 |         |

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|---|--|---|--|--|--|--|--|
| <b>DRILLING LOG</b>   |  | DIVISION<br>South Atlantic                      |  | INSTALLATION<br>Jacksonville District                      |  | SHEET 1<br>OF 1 SHEETS   |  |
| 1. PROJECT<br>C&SF CERP WCA 3 DECOMP  |  |   |  | 9. SIZE AND TYPE OF BIT See Remarks                        |  |  |  |
| 2. BORING DESIGNATION<br>CP08-DCOMP-TP-0013   |  | LOCATION COORDINATES<br>X = 771,817 Y = 663,983 |  | 10. COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. Ft.) |  | HORIZONTAL<br>NAD83  |  |
| 3. DRILLING AGENCY<br>WPC, Inc.   |  | CONTRACTOR FILE NO.                             |  | 11. MANUFACTURER'S DESIGNATION OF DRILL<br>CAT 320         |  | <input type="checkbox"/> AUTO HAMMER<br><input type="checkbox"/> MANUAL HAMMER |  |
| 4. NAME OF DRILLER<br>Danny's Backhoe   |  |   |  | 12. TOTAL SAMPLES<br>5                                     |  | DISTURBED<br>0   |  |
| 5. DIRECTION OF BORING<br><input checked="" type="checkbox"/> VERTICAL<br><input type="checkbox"/> INCLINED |  |   |  | 13. TOTAL NUMBER CORE BOXES<br>0                           |  | 14. ELEVATION GROUND WATER<br>Depth 2.0 Ft.                                    |  |
| 6. THICKNESS OF OVERBURDEN<br>N/A   |  |   |  | 15. DATE BORING<br>10-14-08                                |  | STARTED<br>10-14-08  |  |
| 7. DEPTH DRILLED INTO ROCK<br>N/A   |  |   |  | 16. ELEVATION TOP OF BORING<br>Not Determined              |  | COMPLETED<br>10-14-08  |  |
| 8. TOTAL DEPTH OF BORING<br>8.0 Ft.   |  |   |  | 17. TOTAL RECOVERY FOR BORING<br>N/A                       |  | 18. SIGNATURE AND TITLE OF INSPECTOR<br>Tom Casey, P.E., Geotechnical Engineer |  |

| ELEV. | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS  | %<br>REC. | BOX<br>OR<br>SAMPLE | RQD<br>OR<br>UD | REMARKS  | BLOWS/<br>1 FT. | N-VALUE |
|-------|-------|--------|--|-----------|---------------------|-----------------|----------|-----------------|---------|
| 0     | 0.0   |        | GRAVEL, poorly-graded, mostly angular to subangular fine to coarse gravel-sized limestone, few subangular to rounded fine to medium-grained sand-sized quartz, few angular to subangular fine to medium-grained sand-sized shell, trace silt, moist, 2.5Y 8/2 pale yellow (GP) |           |                     |                 |          |                 |         |
| 3.5   |       |        |  |           | S-1                 |                 | Test Pit |                 |         |
| 5     |       |        | At 5.0 Ft., some organic matter  |           | S-2                 |                 | Test Pit |                 |         |
| 6.5   |       |        |  |           | S-3                 |                 | Test Pit |                 |         |
| 1.5   | 6.5   |        | CLAY, organic-H, high plasticity, mostly clay, some organic matter, little silt, wet, (compressed peat), 10YR 3/3 dark brown (OH)  |           | S-4                 |                 | Test Pit |                 |         |
| 8     | 8.0   |        | LIMESTONE  |           | S-5                 |                 | Test Pit |                 |         |
|       |       |        | NOTES:<br>1. Soils are field visually classified in accordance with the Unified Soils Classification System.   |           |                     |                 |          |                 |         |

|   |  |   |  |  |  |  |  |
|---|--|---|--|--|--|--|--|
| <b>DRILLING LOG</b>   |  | DIVISION<br>South Atlantic                      |  | INSTALLATION<br>Jacksonville District  |  | SHEET 1<br>OF 1 SHEETS   |  |
| 1. PROJECT<br>C&SF CERP WCA 3 DECOMP  |  |   |  | 9. SIZE AND TYPE OF BIT See Remarks  |  |  |  |
| 2. BORING DESIGNATION<br>CP08-DCOMP-TP-0014   |  | LOCATION COORDINATES<br>X = 773,044 Y = 662,414 |  | 10. COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. Ft.)                     |  | HORIZONTAL<br>NAD83<br>VERTICAL<br>NAVD88                                      |  |
| 3. DRILLING AGENCY<br>WPC, Inc.   |  | CONTRACTOR FILE NO.                             |  | 11. MANUFACTURER'S DESIGNATION OF DRILL<br>CAT 320                             |  | <input type="checkbox"/> AUTO HAMMER<br><input type="checkbox"/> MANUAL HAMMER |  |
| 4. NAME OF DRILLER<br>Danny's Backhoe   |  |   |  | 12. TOTAL SAMPLES<br>4   |  | DISTURBED<br>0<br>UNDISTURBED (UD)   |  |
| 5. DIRECTION OF BORING<br><input checked="" type="checkbox"/> VERTICAL<br><input type="checkbox"/> INCLINED |  | DEG. FROM VERTICAL                              |  | 13. TOTAL NUMBER CORE BOXES<br>0   |  |  |  |
| 6. THICKNESS OF OVERBURDEN<br>N/A   |  | BEARING   |  | 14. ELEVATION GROUND WATER<br>Depth 2.0 Ft.                                    |  | 2  |  |
| 7. DEPTH DRILLED INTO ROCK<br>N/A   |  |   |  | 15. DATE BORING<br>10-14-08  |  | STARTED<br>10-14-08<br>COMPLETED<br>10-14-08                                   |  |
| 8. TOTAL DEPTH OF BORING<br>7.0 Ft.   |  |   |  | 16. ELEVATION TOP OF BORING<br>Not Determined                                  |  |  |  |
|   |  |   |  | 17. TOTAL RECOVERY FOR BORING<br>N/A   |  |  |  |
|   |  |   |  | 18. SIGNATURE AND TITLE OF INSPECTOR<br>Tom Casey, P.E., Geotechnical Engineer |  |  |  |

| ELEV. | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS   | % REC. | BOX OR SAMPLE | RQD OR UD | REMARKS  | BLOWS/1 FT. | N-VALUE |
|-------|-------|--------|---|--------|---------------|-----------|----------|-------------|---------|
|       | 0.0   |        | GRAVEL, poorly-graded with silt, mostly angular to subangular fine to coarse gravel-sized limestone, few subangular to rounded fine-grained sand-sized quartz, few silt, few fine to medium-grained sand-sized shell, moist, 2.5Y 6/2 light brownish gray (GP-GM) |        |               |           |          |             |         |
|       | 4.0   |        | At 3.5 Ft., some organic matter   |        | S-1           |           | Test Pit |             |         |
|       | 6.0   |        | SAND, silty, mostly subrounded to rounded fine-grained sand-sized quartz, little silt, few fine to coarse-grained sand-sized shell, 2.5Y 3/2 very dark grayish brown (SM)   |        | S-2           |           | Test Pit |             |         |
|       | 7.0   |        | CLAY, organic-H, high plasticity, mostly organic matter, some clay, little silt, wet, (compressed peat), 10YR 3/3 dark brown (OH)   |        | S-3           |           | Test Pit |             |         |
|       |       |        | LIMESTONE   |        | S-4           |           | Test Pit |             |         |
|       |       |        | NOTES:<br>1. Soils are field visually classified in accordance with the Unified Soils Classification System.  |        |               |           |          |             |         |



## Boring Designation CP08-DCOMP-TP-0015

|   |  |  |  |                               |
|---|--|--|--|-------------------------------|
| <b>DRILLING LOG</b>   |  | <b>DIVISION</b><br>South Atlantic  | <b>INSTALLATION</b><br>Jacksonville District | <b>SHEET 1</b><br>OF 1 SHEETS |
| 1. PROJECT<br>C&SF CERP WCA 3 DECOMP  |  | 9. SIZE AND TYPE OF BIT See Remarks  |  |                               |
| 2. BORING DESIGNATION<br>CP08-DCOMP-TP-0015   |  | 10. COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. Ft.)                     |  |                               |
| 3. DRILLING AGENCY<br>WPC, Inc.   |  | 11. MANUFACTURER'S DESIGNATION OF DRILL<br>CAT 320                             |  |                               |
| 4. NAME OF DRILLER<br>Danny's Backhoe   |  | 12. TOTAL SAMPLES<br>6   |  |                               |
| 5. DIRECTION OF BORING<br><input checked="" type="checkbox"/> VERTICAL<br><input type="checkbox"/> INCLINED |  | 13. TOTAL NUMBER CORE BOXES<br>0   |  |                               |
| 6. THICKNESS OF OVERBURDEN<br>N/A   |  | 14. ELEVATION GROUND WATER<br>Depth 3.5 Ft.                                    |  |                               |
| 7. DEPTH DRILLED INTO ROCK<br>N/A   |  | 15. DATE BORING<br>10-14-08  |  |                               |
| 8. TOTAL DEPTH OF BORING<br>9.5 Ft.   |  | 16. ELEVATION TOP OF BORING<br>Not Determined                                  |  |                               |
|   |  | 17. TOTAL RECOVERY FOR BORING<br>N/A   |  |                               |
|   |  | 18. SIGNATURE AND TITLE OF INSPECTOR<br>Tom Casey, P.E., Geotechnical Engineer |  |                               |

| ELEV.  | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS   | % REC. | BOX OR SAMPLE | RQD OR UD | REMARKS  | BLOWS/1 FT. | N-VALUE |
|--|-------|--------|---|--------|---------------|-----------|----------|-------------|---------|
| 0  | 0.0   |        | GRAVEL, poorly-graded with silt, mostly angular to subangular fine to coarse gravel-sized limestone, few subangular to rounded fine-grained sand-sized quartz, few silt, few angular to subangular fine to medium-grained sand-sized shell, moist, 2.5Y 8/2 pale yellow (GP-GM) |        |               |           |          |             |         |
| 5  | 5.0   |        | GRAVEL, poorly-graded, mostly angular to subangular fine to coarse gravel-sized limestone, few angular to subangular fine to coarse-grained sand-sized shell, trace subrounded to rounded fine-grained sand-sized quartz, trace silt, 2.5Y 7/2 light gray (GP)                  |        |               |           | Test Pit |             |         |
| 10   | 8.5   |        | SAND, silty, mostly subangular to rounded fine-grained sand-sized quartz, some silt, trace organic matter, wet, 10YR 3/3 dark brown (SM)  |        |               |           | Test Pit |             |         |
| 15   | 9.5   |        | LIMESTONE   |        |               |           | Test Pit |             |         |
| NOTES:<br>1. Soils are field visually classified in accordance with the Unified Soils Classification System. |       |        |   |        |               |           |          |             |         |

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| DRILLING LOG  |       | DIVISION<br>South Atlantic |   | INSTALLATION<br>Jacksonville District  |               | SHEET 1<br>OF 1 SHEETS |          |
|---|-------|----------------------------|---|--|---------------|------------------------|----------|
| 1. PROJECT<br>C&SF CERP WCA 3 DECOMP  |       |                            |   | 9. SIZE AND TYPE OF BIT See Remarks  |               |                        |          |
| 2. BORING DESIGNATION<br>CP08-DCOMP-TP-0016   |       |                            |   | 10. COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. Ft.)                     |               | HORIZONTAL<br>NAD83    |          |
| 3. DRILLING AGENCY<br>WPC, Inc.   |       |                            |   | 11. MANUFACTURER'S DESIGNATION OF DRILL<br>CAT 320                             |               | VERTICAL<br>NAVD88     |          |
| 4. NAME OF DRILLER<br>Danny's Backhoe   |       |                            |   | 12. TOTAL SAMPLES<br>1   |               | DISTURBED<br>0         |          |
| 5. DIRECTION OF BORING<br><input checked="" type="checkbox"/> VERTICAL<br><input type="checkbox"/> INCLINED |       |                            |   | 13. TOTAL NUMBER CORE BOXES<br>0   |               | UNDISTURBED (UD)<br>0  |          |
| 6. THICKNESS OF OVERBURDEN<br>N/A   |       |                            |   | 14. ELEVATION GROUND WATER<br>Depth 3.5 Ft.                                    |               | 3.5                    |          |
| 7. DEPTH DRILLED INTO ROCK<br>N/A   |       |                            |   | 15. DATE BORING<br>10-20-08  |               | STARTED<br>10-20-08    |          |
| 8. TOTAL DEPTH OF BORING<br>10.5 Ft.  |       |                            |   | 16. ELEVATION TOP OF BORING<br>Not Determined                                  |               | COMPLETED<br>10-20-08  |          |
|   |       |                            |   | 17. TOTAL RECOVERY FOR BORING<br>N/A   |               |                        |          |
|   |       |                            |   | 18. SIGNATURE AND TITLE OF INSPECTOR<br>Tom Casey, P.E., Geotechnical Engineer |               |                        |          |
| ELEV.   | DEPTH | LEGEND                     | CLASSIFICATION OF MATERIALS   | REC.   | BOX OR SAMPLE | RQD OR UD              | REMARKS  |
| 0.0   | 0.0   |                            | GRAVEL, silty, mostly angular to subangular fine to coarse gravel-sized limestone, little silt, few subangular to rounded fine-grained sand-sized quartz, few boulder-sized limestone, moist, 2.5Y 6/2 light brownish gray (GM) |  |               |                        |          |
| 2.5   | 2.5   |                            |   |  |               |                        |          |
| 6.0   | 6.0   |                            | CLAY, organic-H, high plasticity, mostly clay, some organic matter, little silt, wet, (compressed peat), 10YR 3/3 dark brown (OH)   |  |               |                        | Test Pit |
| 10.5  | 10.5  |                            | LIMESTONE   |  |               |                        |          |
|   |       |                            | NOTES:<br>1. Soils are field visually classified in accordance with the Unified Soils Classification System.  |  |               |                        |          |

Boring Designation CP08-DCOMP-TP-0017

|   |  |  |                                       |                        |
|---|--|--|---------------------------------------|------------------------|
| <b>DRILLING LOG</b>   |  | DIVISION<br>South Atlantic   | INSTALLATION<br>Jacksonville District | SHEET 1<br>OF 1 SHEETS |
| 1. PROJECT<br>C&SF CERP WCA 3 DECOMP  |  | 9. SIZE AND TYPE OF BIT See Remarks  |                                       |                        |
| 2. BORING DESIGNATION<br>CP08-DCOMP-TP-0017   |  | 10. COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. Ft.)                     |                                       |                        |
| 3. DRILLING AGENCY<br>WPC, Inc.   |  | 11. MANUFACTURER'S DESIGNATION OF DRILL<br>CAT 320                             |                                       |                        |
| 4. NAME OF DRILLER<br>Danny's Backhoe   |  | 12. TOTAL SAMPLES<br>2   |                                       |                        |
| 5. DIRECTION OF BORING<br><input checked="" type="checkbox"/> VERTICAL<br><input type="checkbox"/> INCLINED |  | 13. TOTAL NUMBER CORE BOXES<br>0   |                                       |                        |
| 6. THICKNESS OF OVERBURDEN<br>N/A   |  | 14. ELEVATION GROUND WATER<br>Depth 3.0 Ft.                                    |                                       |                        |
| 7. DEPTH DRILLED INTO ROCK<br>N/A   |  | 15. DATE BORING<br>10-20-08  |                                       |                        |
| 8. TOTAL DEPTH OF BORING<br>8.0 Ft.   |  | 16. ELEVATION TOP OF BORING<br>Not Determined                                  |                                       |                        |
|   |  | 17. TOTAL RECOVERY FOR BORING<br>N/A   |                                       |                        |
|   |  | 18. SIGNATURE AND TITLE OF INSPECTOR<br>Tom Casey, P.E., Geotechnical Engineer |                                       |                        |

| ELEV. | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS   | NO. REC. | BOX OR SAMPLE | RQD OR UD | REMARKS  | BLOWS/1 FT. | N-VALUE |
|-------|-------|--------|---|----------|---------------|-----------|----------|-------------|---------|
| 0.0   |       |        | GRAVEL, poorly-graded with silt, mostly angular to subangular fine to coarse gravel-sized limestone, few subangular to rounded fine-grained sand-sized quartz, few silt, few angular to subangular fine to medium-grained sand-sized shell, moist, 2.5Y 8/2 pale yellow (GP-GM) |          |               |           |          |             |         |
|       |       |        |   | S-1      |               |           | Test Pit |             |         |
|       |       |        |   | S-2      |               |           | Test Pit |             |         |
| 6.0   |       |        | CLAY, organic-H, high plasticity, mostly clay, some organic matter, little silt, wet, (compressed peat), 10YR 3/3 dark brown (OH)   |          |               |           |          |             |         |
| 8.0   |       |        | LIMESTONE   |          |               |           |          |             |         |
|       |       |        | NOTES:<br>1. Soils are field visually classified in accordance with the Unified Soils Classification System.  |          |               |           |          |             |         |

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| DRILLING LOG   |       | DIVISION<br>South Atlantic                      |   | INSTALLATION<br>Jacksonville District                      |                  | SHEET 1<br>OF 1 SHEETS   |          |                 |         |
|--|-------|---|---|--|------------------|--|----------|-----------------|---------|
| 1. PROJECT<br>C&SF CERP WCA 3 DECOMP   |       |   |   | 9. SIZE AND TYPE OF BIT See Remarks                        |                  |  |          |                 |         |
| 2. BORING DESIGNATION<br>CP08-DCOMP-TP-0018  |       | LOCATION COORDINATES<br>X = 780,478 Y = 653,231 |   | 10. COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. Ft.) |                  | HORIZONTAL<br>NAD83<br>VERTICAL<br>NAVD88                                      |          |                 |         |
| 3. DRILLING AGENCY<br>WPC, Inc.  |       | CONTRACTOR FILE NO.                             |   | 11. MANUFACTURER'S DESIGNATION OF DRILL<br>CAT 320         |                  | <input type="checkbox"/> AUTO HAMMER<br><input type="checkbox"/> MANUAL HAMMER |          |                 |         |
| 4. NAME OF DRILLER<br>Danny's Backhoe  |       |   |   | 12. TOTAL SAMPLES<br>2                                     |                  | DISTURBED<br>0   |          |                 |         |
| 5. DIRECTION OF BORING<br><input checked="" type="checkbox"/> VERTICAL<br><input type="checkbox"/> INCLINED  |       |   |   | 13. TOTAL NUMBER CORE BOXES<br>0                           |                  | 14. ELEVATION GROUND WATER<br>Depth 2.0 Ft.                                    |          |                 |         |
| 6. THICKNESS OF OVERBURDEN<br>N/A  |       |   |   | 15. DATE BORING<br>10-20-08                                |                  | STARTED<br>10-20-08  |          |                 |         |
| 7. DEPTH DRILLED INTO ROCK<br>N/A  |       |   |   | 16. ELEVATION TOP OF BORING<br>Not Determined              |                  | COMPLETED<br>10-20-08  |          |                 |         |
| 8. TOTAL DEPTH OF BORING<br>7.5 Ft.  |       |   |   | 17. TOTAL RECOVERY FOR BORING<br>N/A                       |                  | 18. SIGNATURE AND TITLE OF INSPECTOR<br>Tom Casey, P.E., Geotechnical Engineer |          |                 |         |
| ELEV.  | DEPTH | LEGEND  | CLASSIFICATION OF MATERIALS   | REC.   | BOX OR<br>SAMPLE | ROD<br>OR<br>UD  | REMARKS  | BLOWS/<br>1 FT. | N-VALUE |
| 0  | 0.0   |   | GRAVEL, poorly-graded with silt, mostly angular to subangular fine to coarse gravel-sized limestone, few subangular to rounded fine-grained sand-sized quartz, few boulder-sized limestone, few silt, few angular to subangular fine to coarse-grained sand-sized shell, moist, 2.5Y 4/2 dark grayish brown (GP-GM) |  |                  |  |          |                 |         |
| 5.5  | 5.5   |   | CLAY, organic-H, high plasticity, mostly clay, some organic matter, little silt, wet (compressed peat), 10YR 3/3 dark brown (OH)  |  | S-1              |  | Test Pit |                 |         |
| 7.5  | 7.5   |   | LIMESTONE   |  | S-2              |  | Test Pit |                 |         |
| NOTES:<br>1. Soils are field visually classified in accordance with the Unified Soils Classification System. |       |   |   |  |                  |  |          |                 |         |



Boring Designation CP08-DCOMP-TP-0019

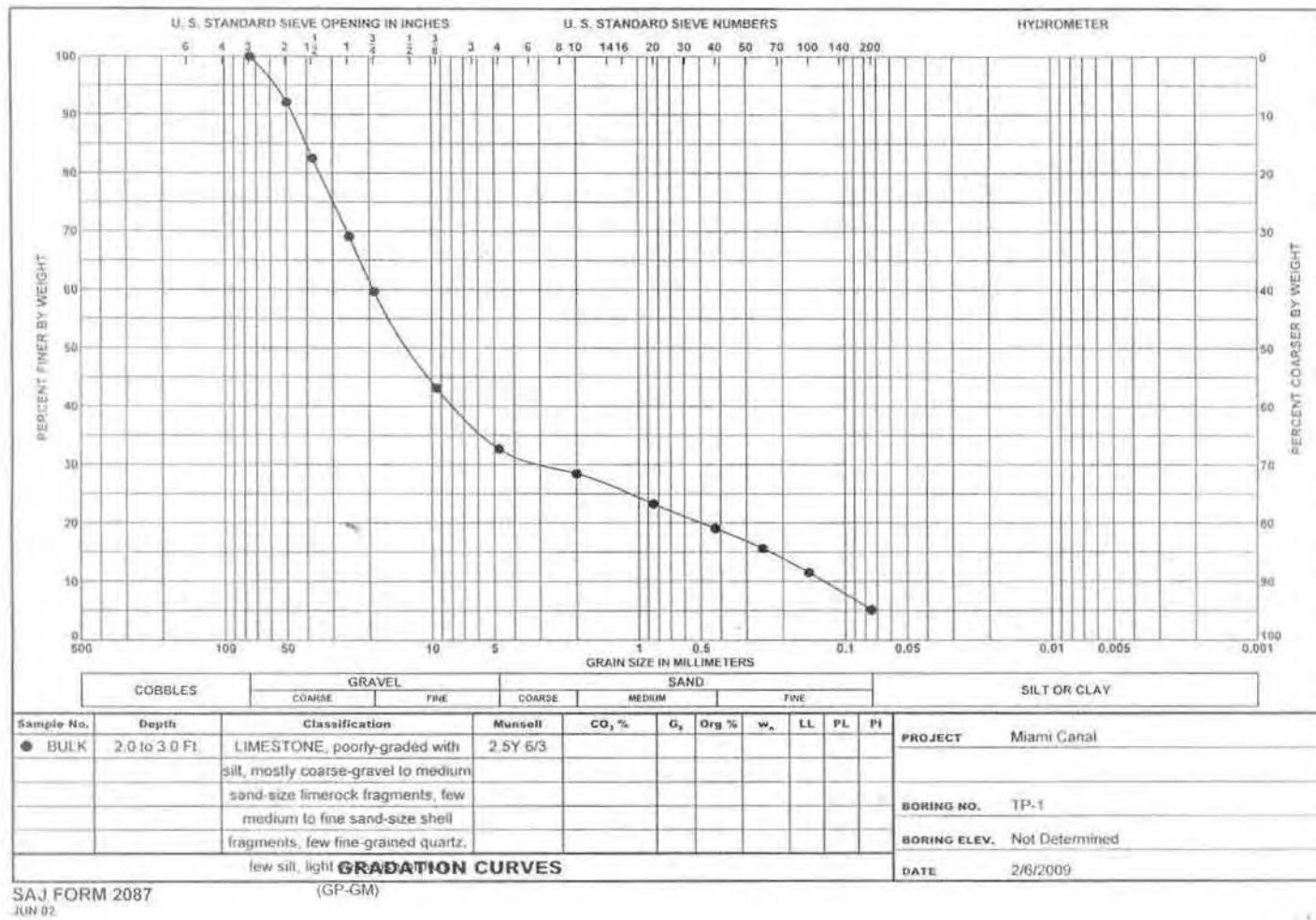
| DRILLING LOG  |  | DIVISION<br>South Atlantic |  | INSTALLATION<br>Jacksonville District                      |  | SHEET 1<br>OF 1 SHEETS   |  |
|---|--|----------------------------|--|--|--|--|--|
| 1. PROJECT<br>C&SF CERP WCA 3 DECOMP  |  |                            |  | 9. SIZE AND TYPE OF BIT<br>See Remarks                     |  |  |  |
| 2. BORING DESIGNATION<br>CP08-DCOMP-TP-0019   |  |                            |  | 10. COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. Ft.) |  | HORIZONTAL<br>NAD83<br>VERTICAL<br>NAVD88                                      |  |
| 3. DRILLING AGENCY<br>WPC, Inc.   |  |                            |  | 11. MANUFACTURER'S DESIGNATION OF DRILL<br>CAT 320         |  | <input type="checkbox"/> AUTO HAMMER<br><input type="checkbox"/> MANUAL HAMMER |  |
| 4. NAME OF DRILLER<br>Danny's Backhoe   |  |                            |  | 12. TOTAL SAMPLES  |  | DISTURBED<br>1<br>UNDISTURBED (UD)<br>0  |  |
| 5. DIRECTION OF BORING<br><input checked="" type="checkbox"/> VERTICAL<br><input type="checkbox"/> INCLINED |  |                            |  | 13. TOTAL NUMBER CORE BOXES<br>0                           |  | 14. ELEVATION GROUND WATER<br>Depth 3.0 Ft.                                    |  |
| 6. THICKNESS OF OVERBURDEN<br>N/A   |  |                            |  | 15. DATE BORING<br>10-21-08                                |  | 16. ELEVATION TOP OF BORING<br>Not Determined                                  |  |
| 7. DEPTH DRILLED INTO ROCK<br>N/A   |  |                            |  | 17. TOTAL RECOVERY FOR BORING<br>N/A                       |  | 18. SIGNATURE AND TITLE OF INSPECTOR<br>Tom Casey, P.E., Geotechnical Engineer |  |
| 8. TOTAL DEPTH OF BORING<br>8.5 Ft.   |  |                            |  |  |  |  |  |

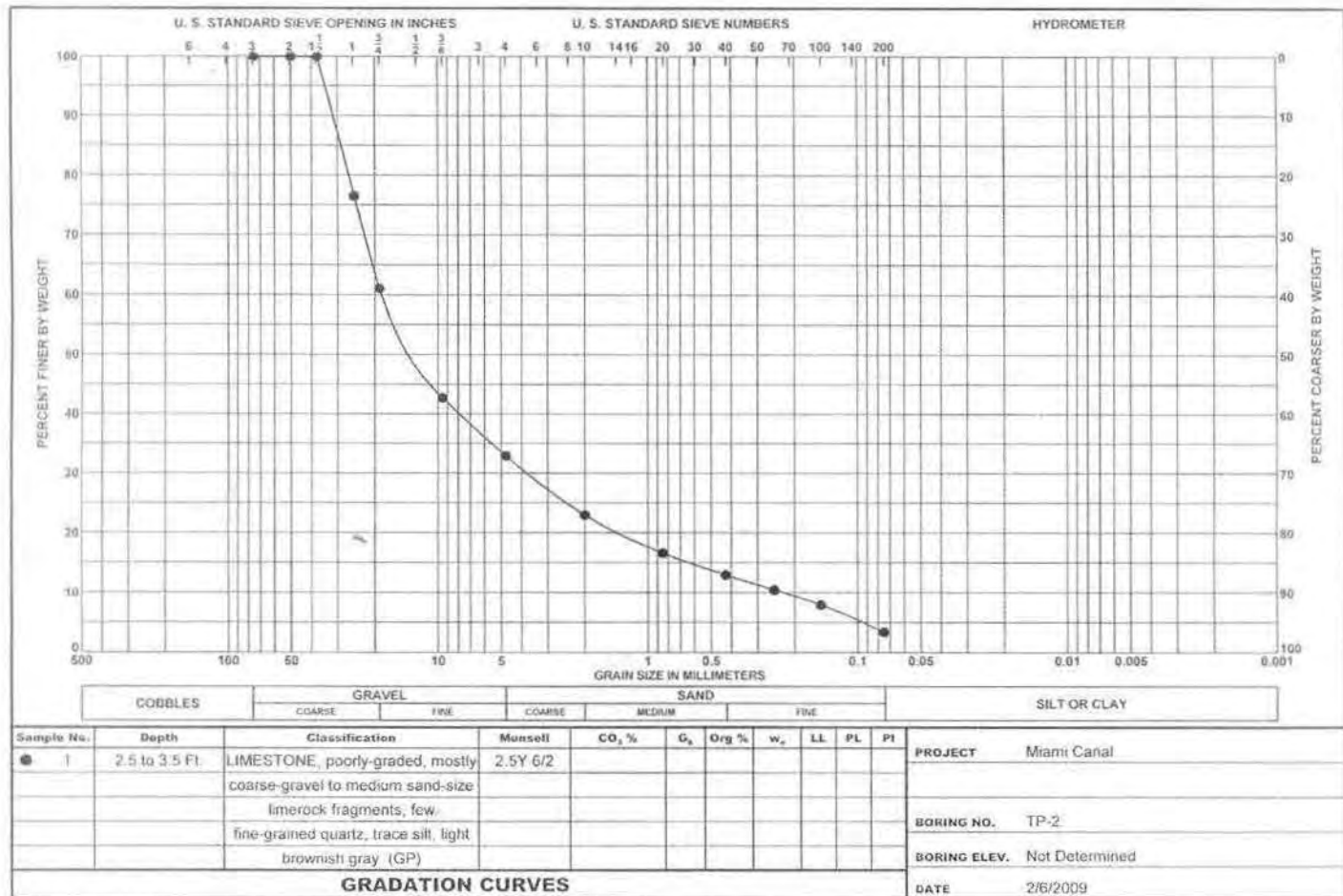
  

| ELEV. | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS  | REC. | BOX OR SAMPLE | ROD OR UD | REMARKS  | BLOWS/1 FT. | N-VALUE |
|-------|-------|--------|--|------|---------------|-----------|----------|-------------|---------|
| 0.0   | 0.0   |        | GRAVEL, poorly-graded with silt, mostly angular to subangular fine to coarse gravel-sized limestone, few subangular to rounded fine-grained sand-sized quartz, few silt, moist, 2.5Y 6/3 light yellowish brown (GP-GM) |      |               |           |          |             |         |
| 3.0   | 3.0   |        | CLAY, organic-H, high plasticity, mostly clay, some organic matter, little silt, wet, (compressed peat), 10YR 3/3 dark brown (OH)  |      |               |           | Test Pit |             |         |
| 8.5   | 8.5   |        | LIMESTONE  |      |               |           |          |             |         |
|       |       |        | NOTES:<br>1. Soils are field visually classified in accordance with the Unified Soils Classification System.   |      |               |           |          |             |         |

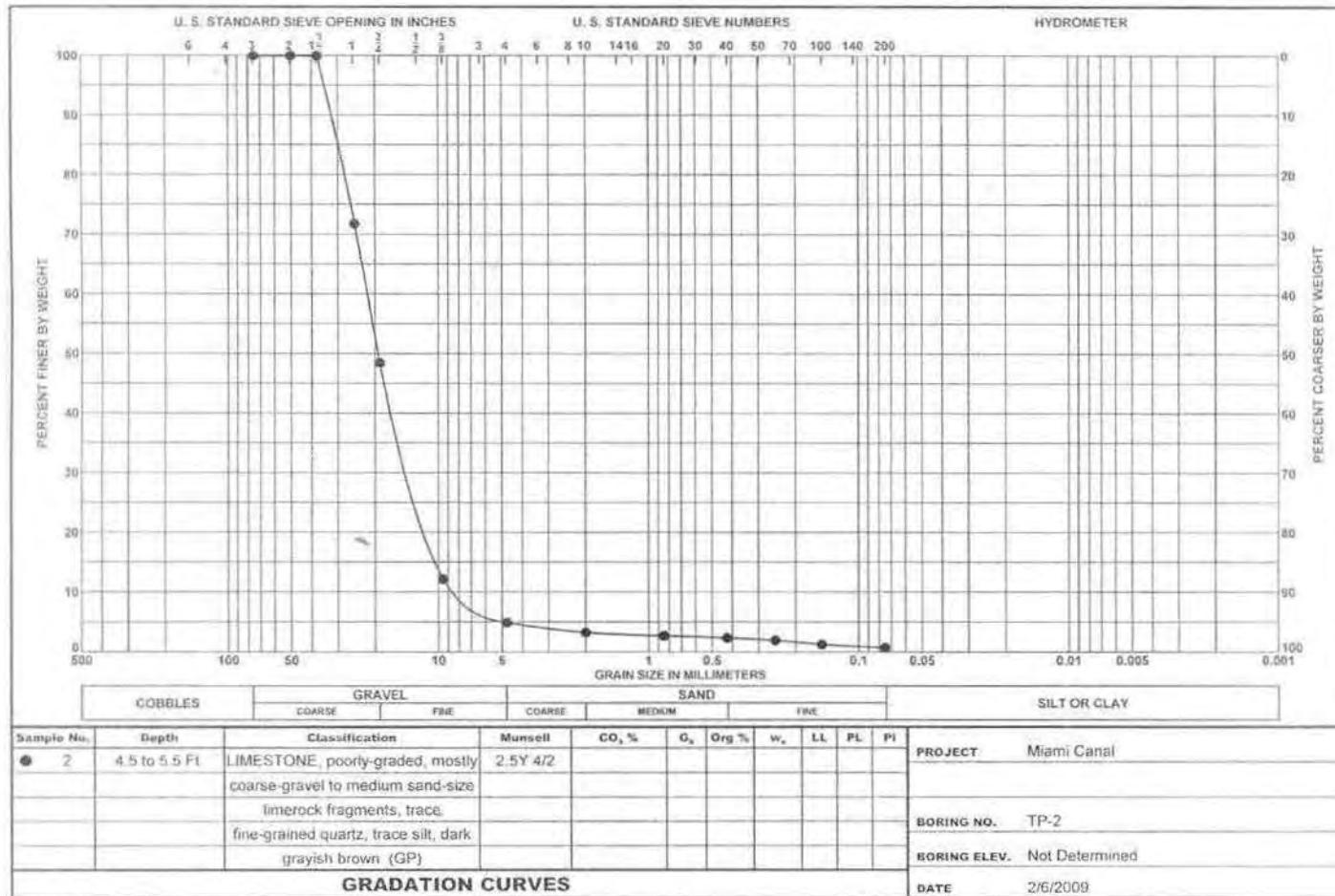
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| DRILLING LOG  |       | DIVISION<br>South Atlantic |   | INSTALLATION<br>Jacksonville District  |               | SHEET 1<br>OF 1 SHEETS |          |             |         |
|---|-------|----------------------------|---|--|---------------|------------------------|----------|-------------|---------|
| 1. PROJECT<br>C&SF CERP WCA 3 DECOMP  |       |                            |   | 9. SIZE AND TYPE OF BIT See Remarks  |               |                        |          |             |         |
| 2. BORING DESIGNATION<br>CP08-DCOMP-TP-0020   |       |                            |   | 10. COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. Ft.)                     |               |                        |          |             |         |
| 3. DRILLING AGENCY<br>WPC, Inc.   |       |                            |   | 11. MANUFACTURER'S DESIGNATION OF DRILL<br>CAT 320                             |               |                        |          |             |         |
| 4. NAME OF DRILLER<br>Danny's Backhoe   |       |                            |   | 12. TOTAL SAMPLES<br>2   |               |                        |          |             |         |
| 5. DIRECTION OF BORING<br><input checked="" type="checkbox"/> VERTICAL<br><input type="checkbox"/> INCLINED |       |                            |   | 13. TOTAL NUMBER CORE BOXES<br>0   |               |                        |          |             |         |
| 6. THICKNESS OF OVERBURDEN<br>N/A   |       |                            |   | 14. ELEVATION GROUND WATER<br>Depth 3.5 Ft.                                    |               |                        |          |             |         |
| 7. DEPTH DRILLED INTO ROCK<br>N/A   |       |                            |   | 15. DATE BORING<br>10-22-08  |               |                        |          |             |         |
| 8. TOTAL DEPTH OF BORING<br>8.0 Ft.   |       |                            |   | 16. ELEVATION TOP OF BORING<br>Not Determined                                  |               |                        |          |             |         |
|   |       |                            |   | 17. TOTAL RECOVERY FOR BORING<br>N/A   |               |                        |          |             |         |
|   |       |                            |   | 18. SIGNATURE AND TITLE OF INSPECTOR<br>Tom Casey, P.E., Geotechnical Engineer |               |                        |          |             |         |
| ELEV.   | DEPTH | LEGEND                     | CLASSIFICATION OF MATERIALS   | % REC.   | BOX OR SAMPLE | ROD OR UD              | REMARKS  | BLOWS/1 FT. | N-VALUE |
| 0.0   | 0.0   |                            | GRAVEL, poorly-graded with silt, mostly angular to subangular fine to coarse gravel-sized limestone, few subangular to rounded fine-grained sand-sized quartz, few boulder-sized limestone, few silt, few angular to subangular fine to medium-grained sand-sized shell, moist, 2.5Y 7/2 light gray (GP-GM) |  |               |                        | Test Pit |             |         |
| 6.5   | 6.5   |                            | CLAY, organic-H, high-plasticity, mostly clay, some organic matter, little silt, wet, (compressed peat), 10YR 3/3 dark brown (OH)   |  |               |                        | Test Pit |             |         |
| 8.0   | 8.0   |                            | LIMESTONE   |  |               |                        |          |             |         |
|   |       |                            | NOTES:<br>1. Soils are field visually classified in accordance with the Unified Soils Classification System.  |  |               |                        |          |             |         |

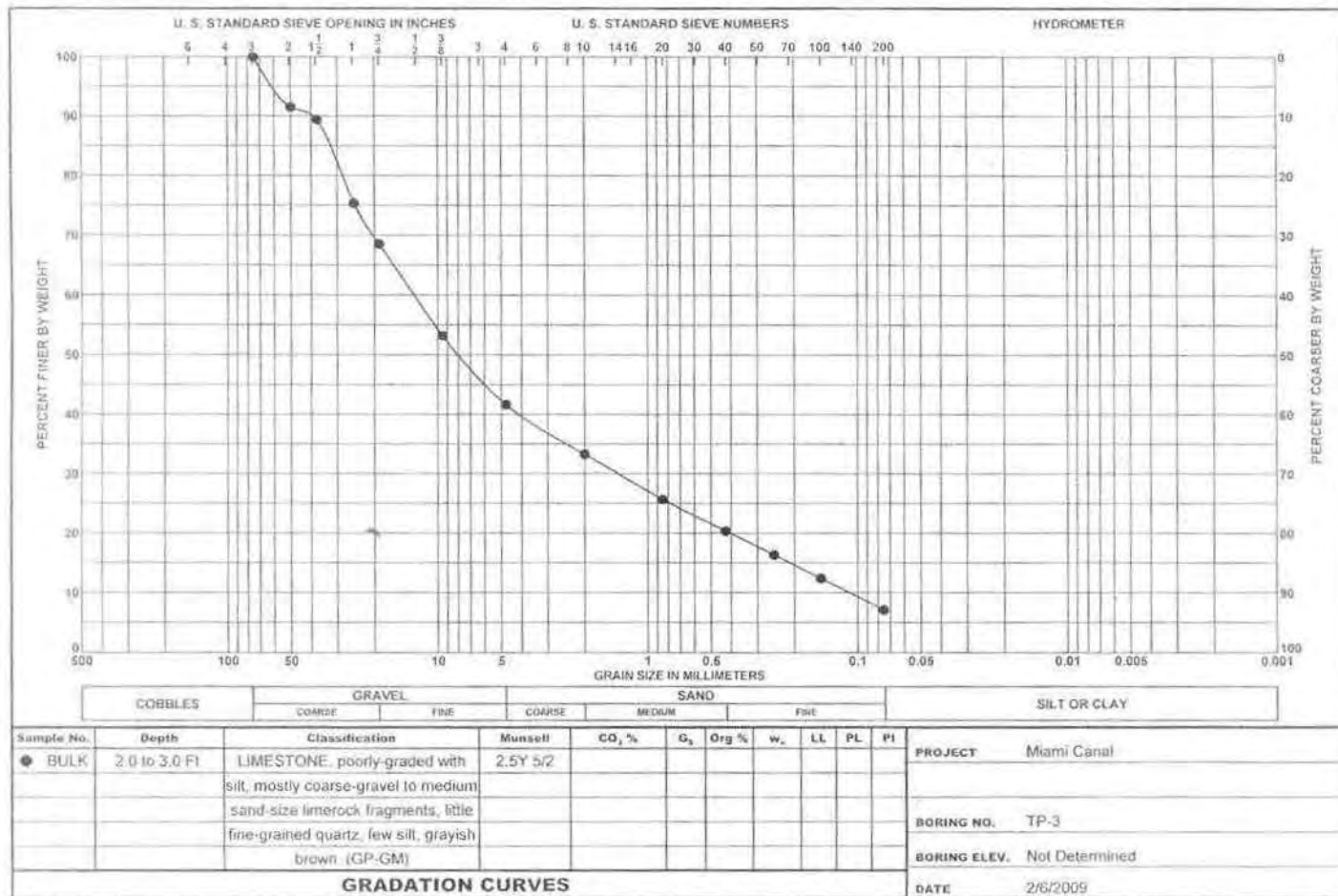


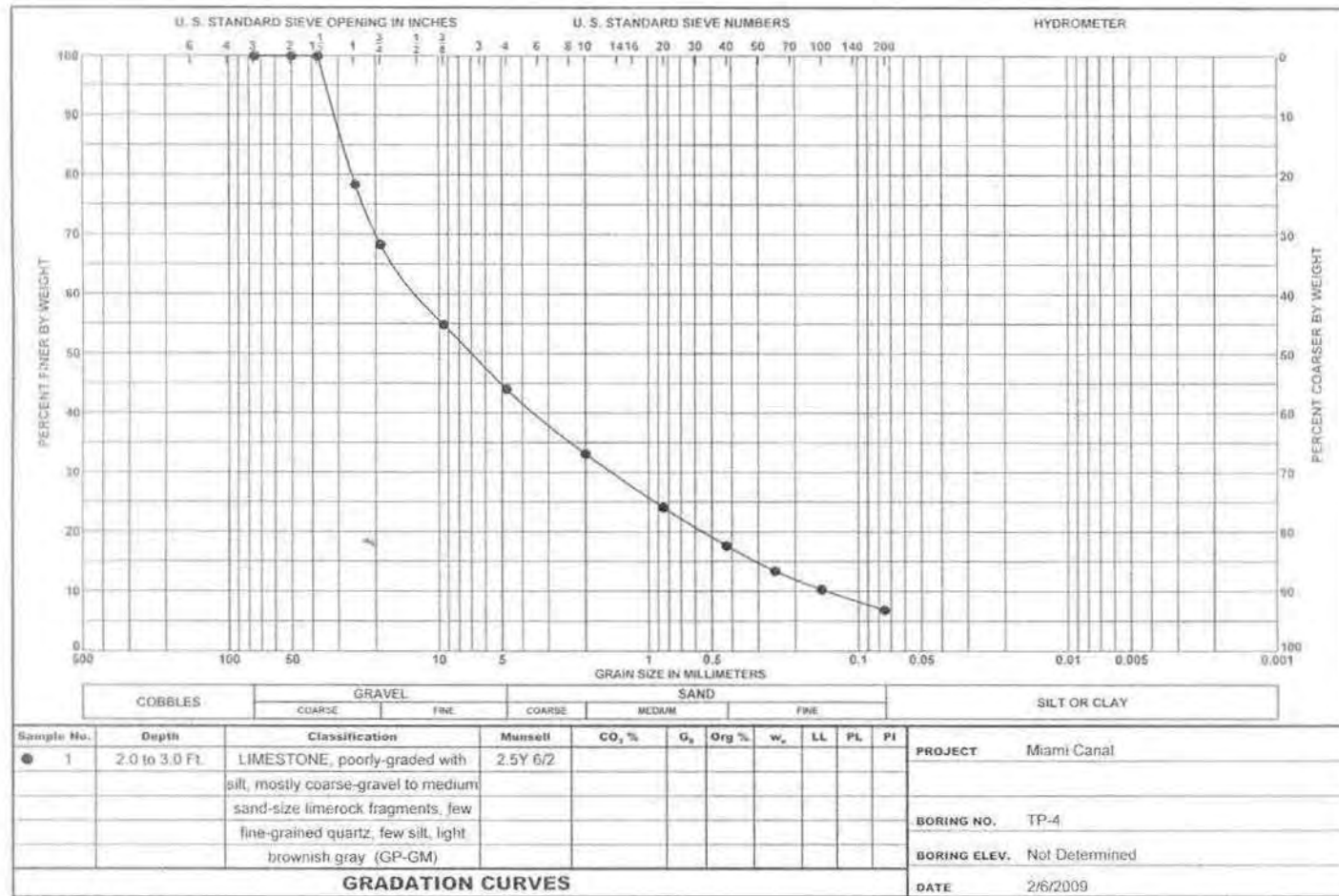




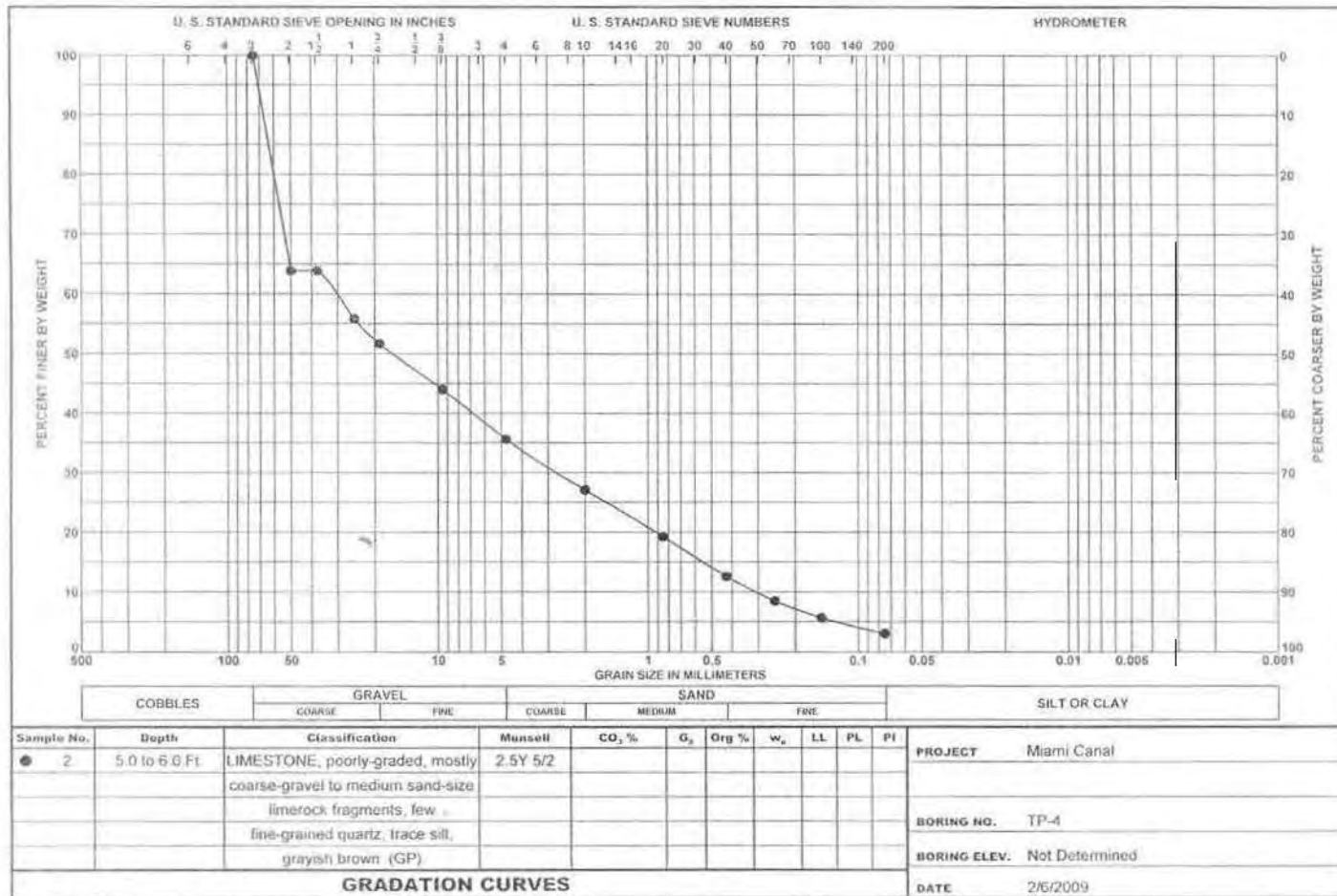


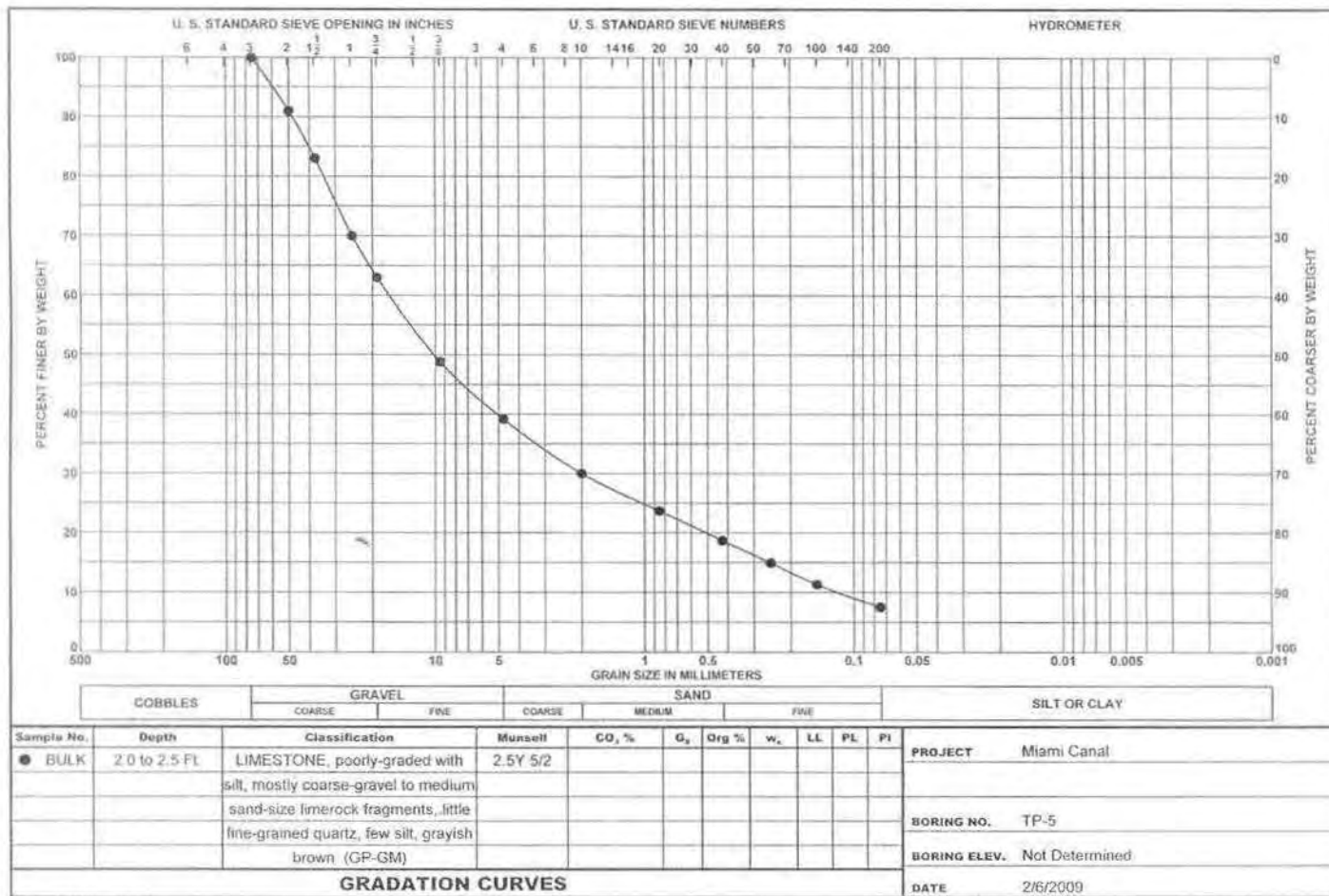
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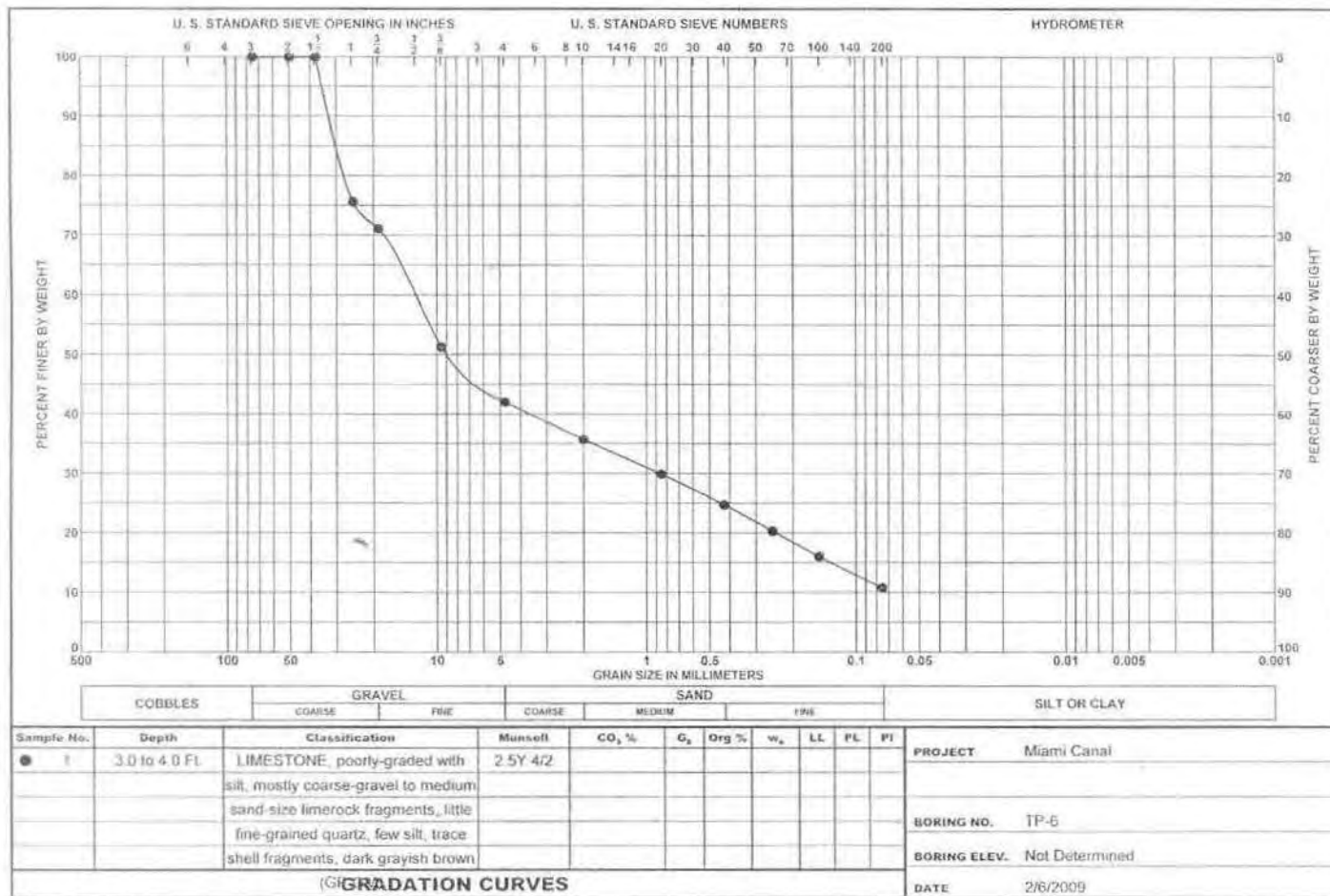


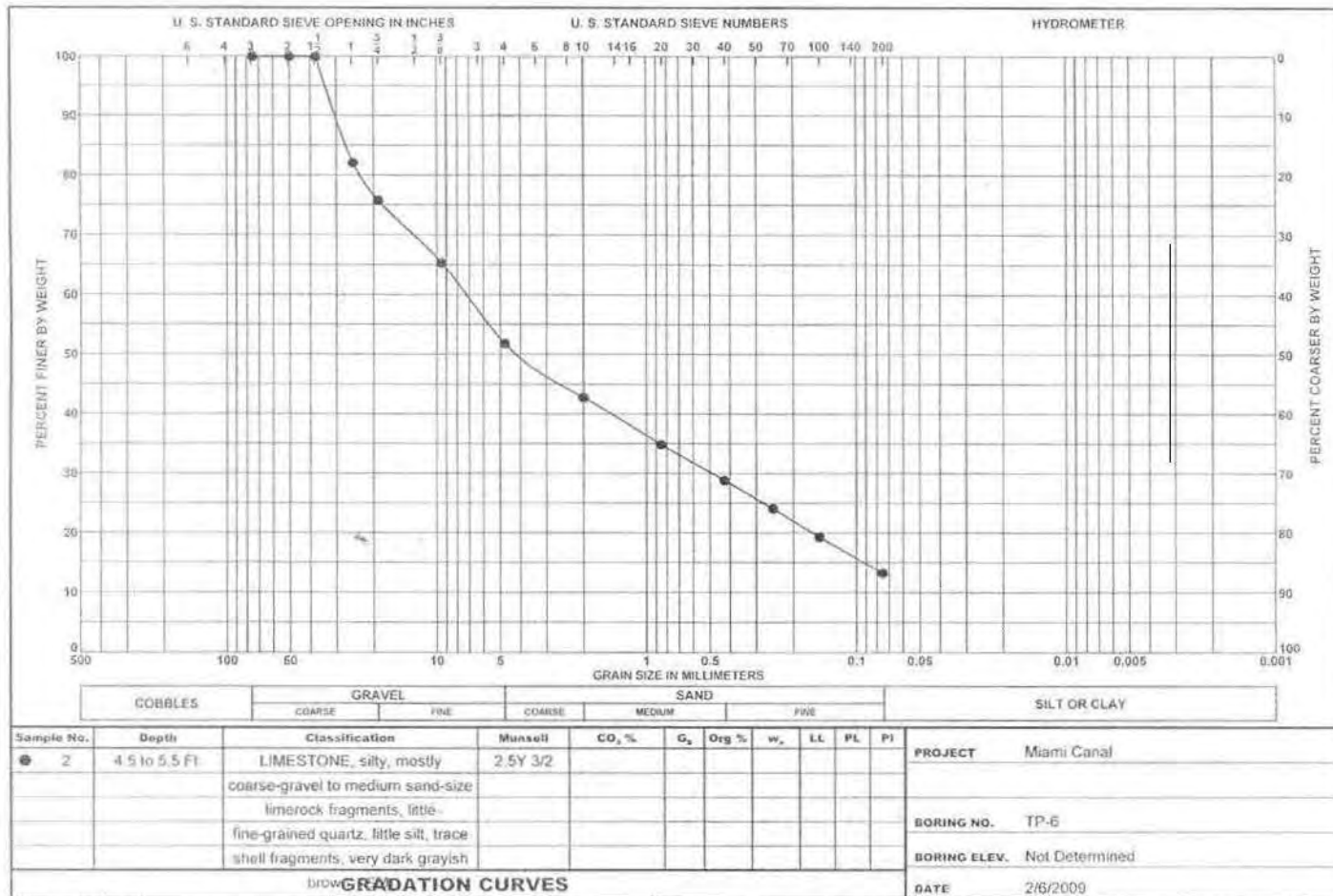


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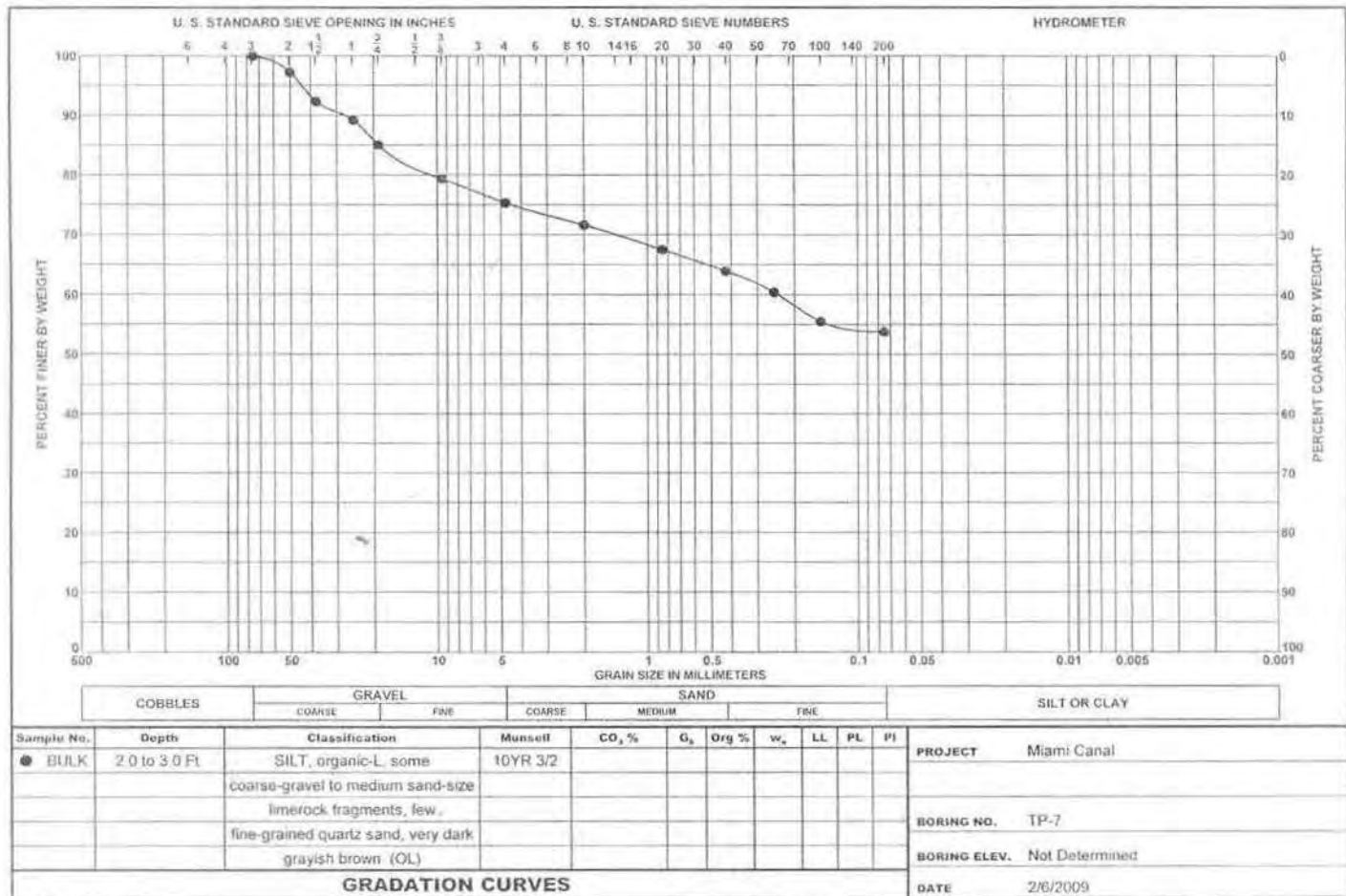






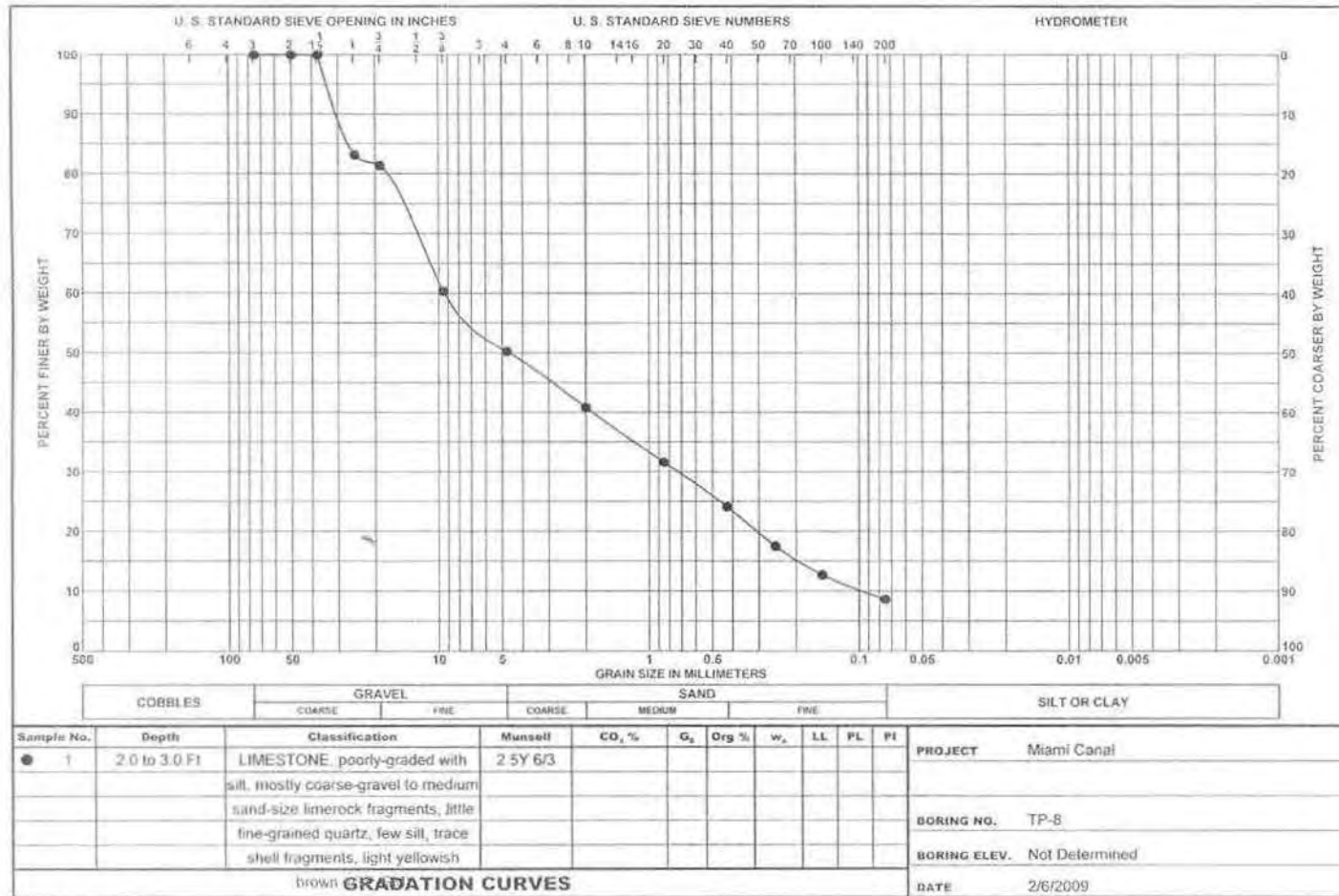


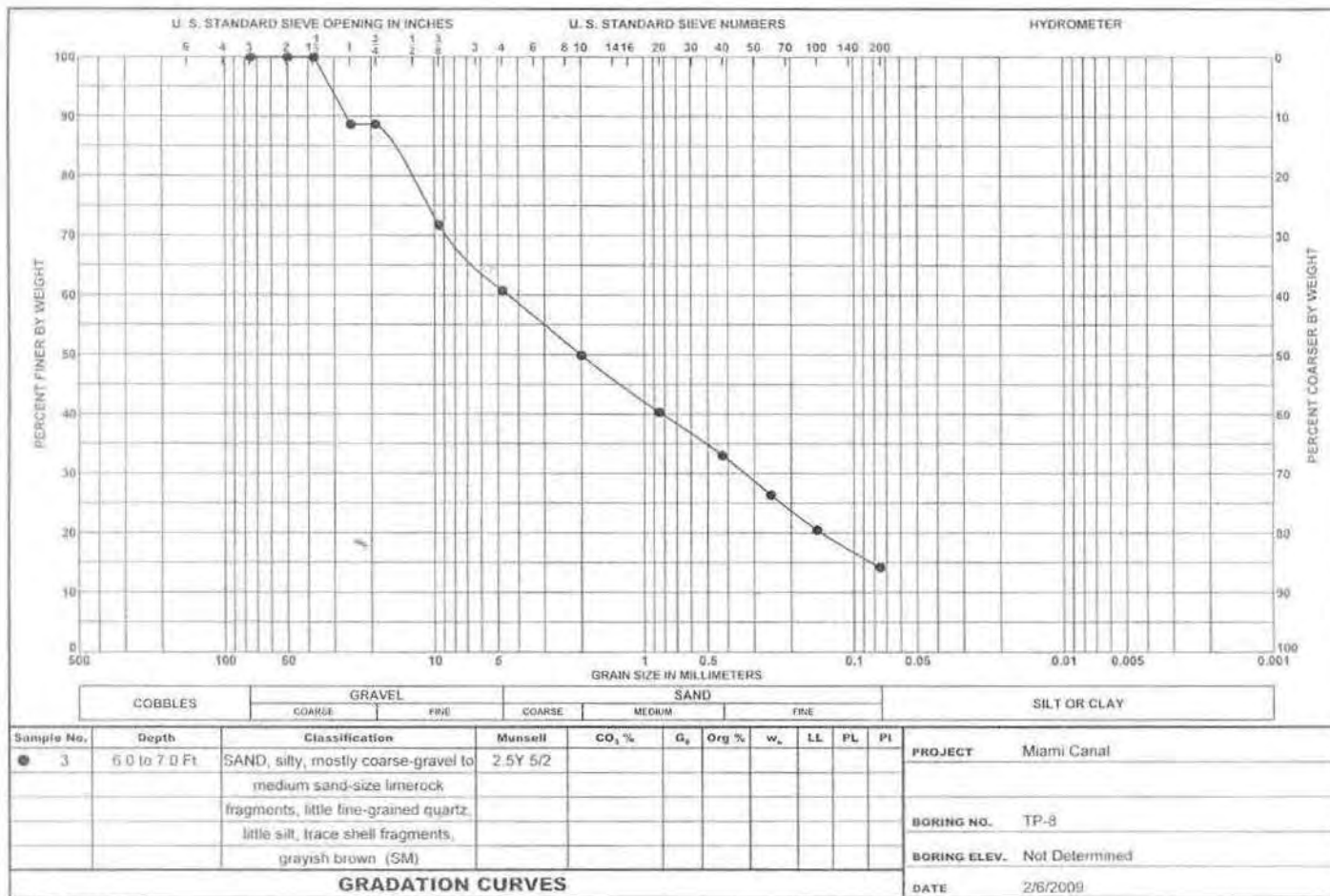


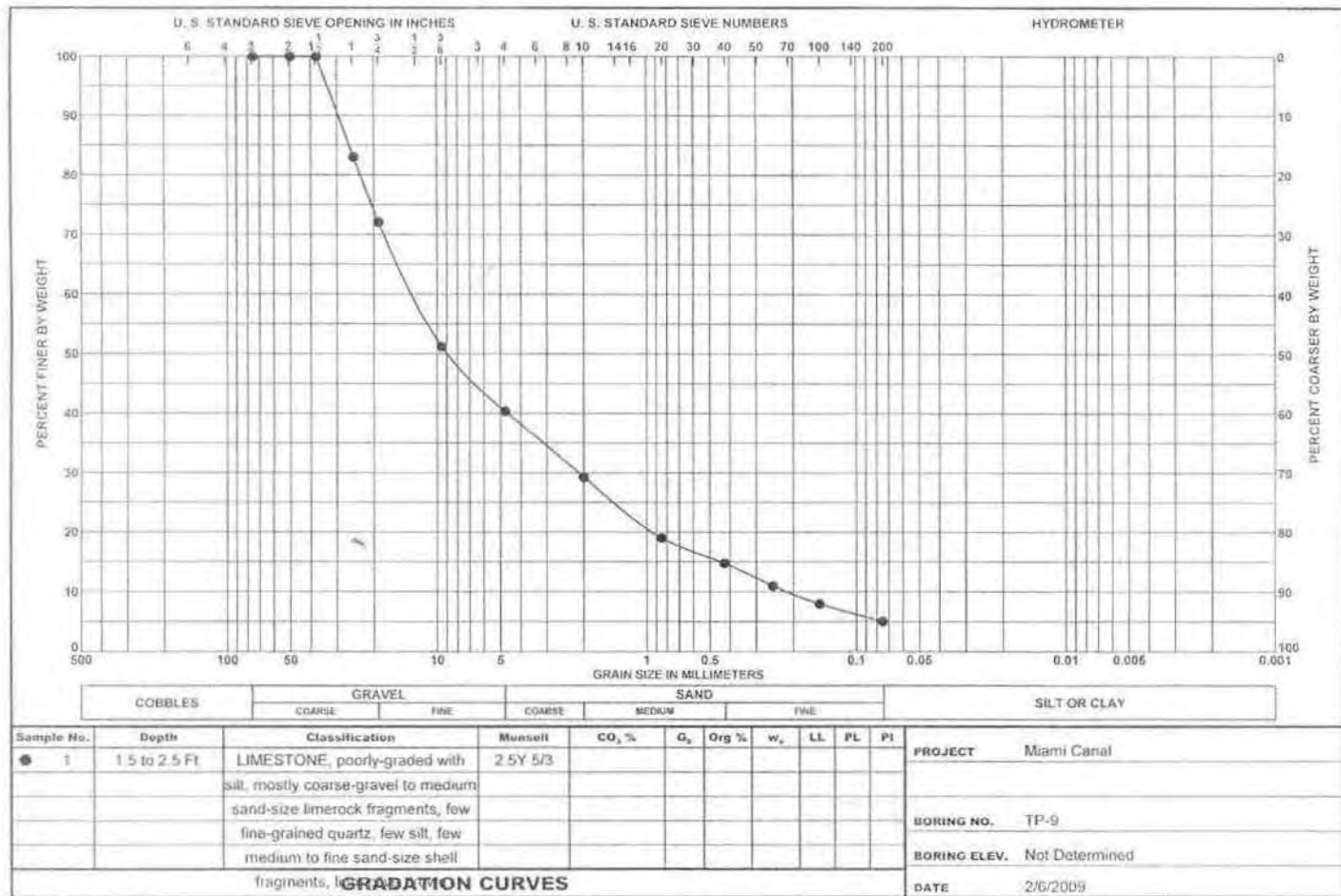


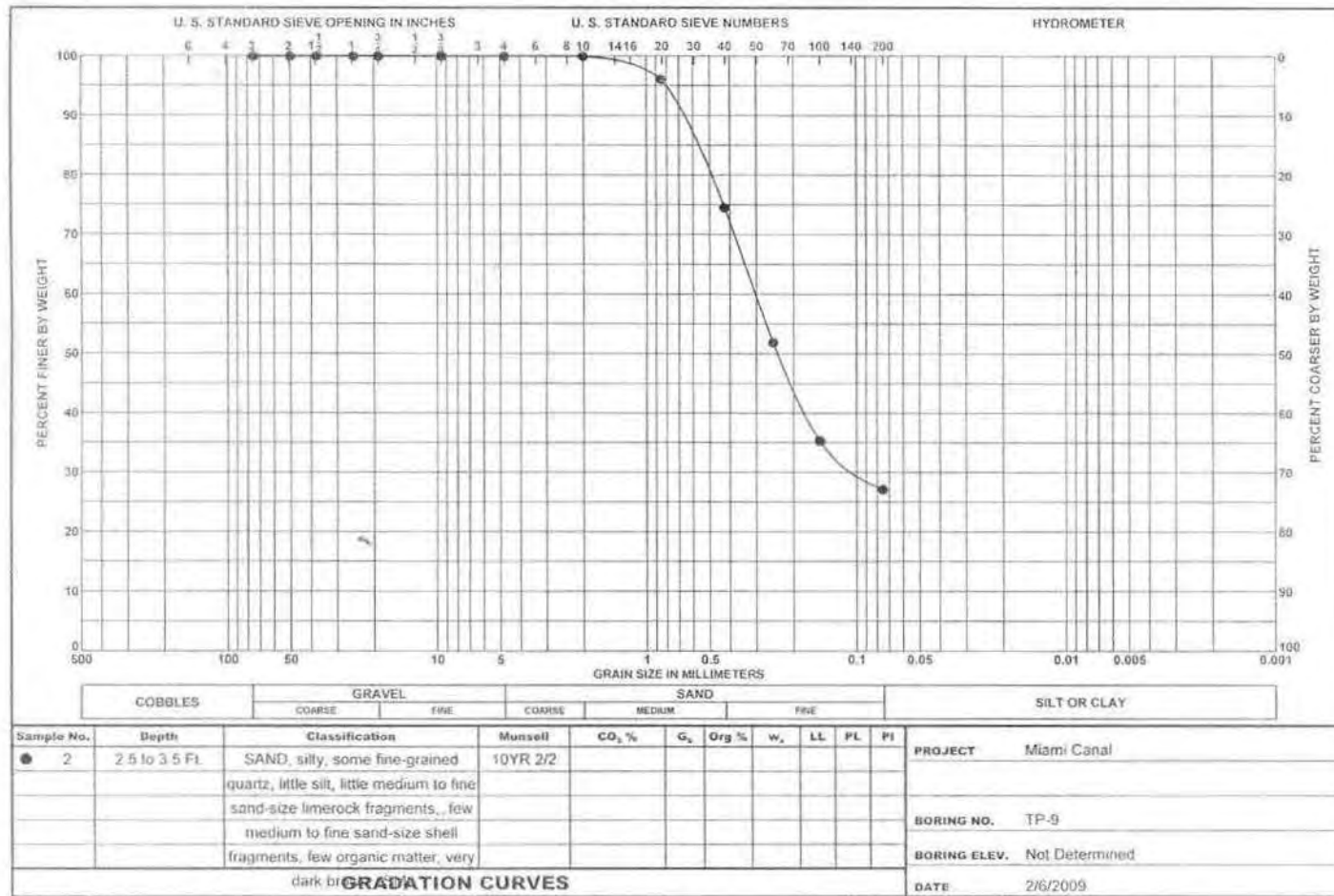
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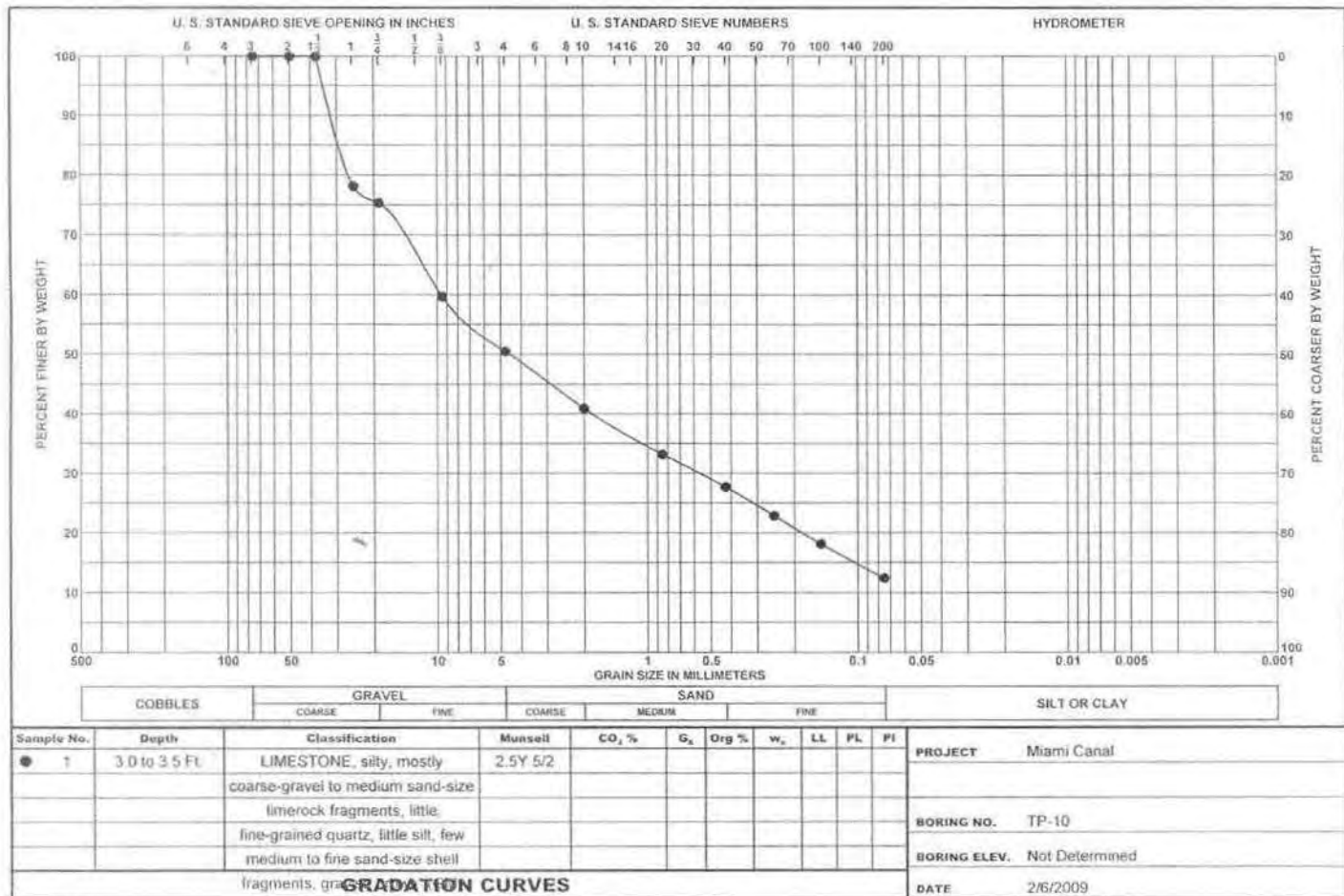


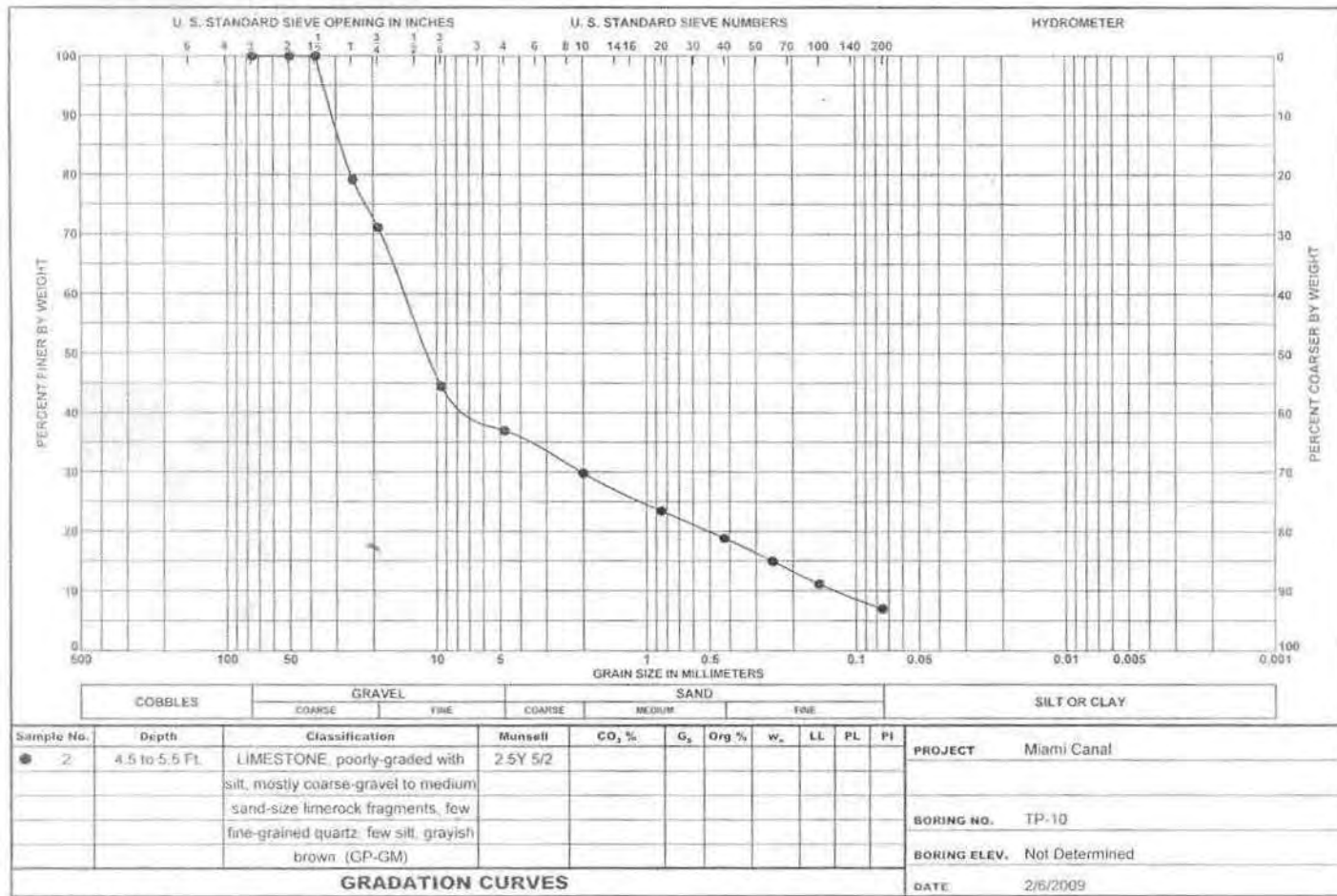












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### ANNEX G-3. GEOLOGICAL INVESTIGATIONS – BLUE, GREEN, AND YELLOW LINES

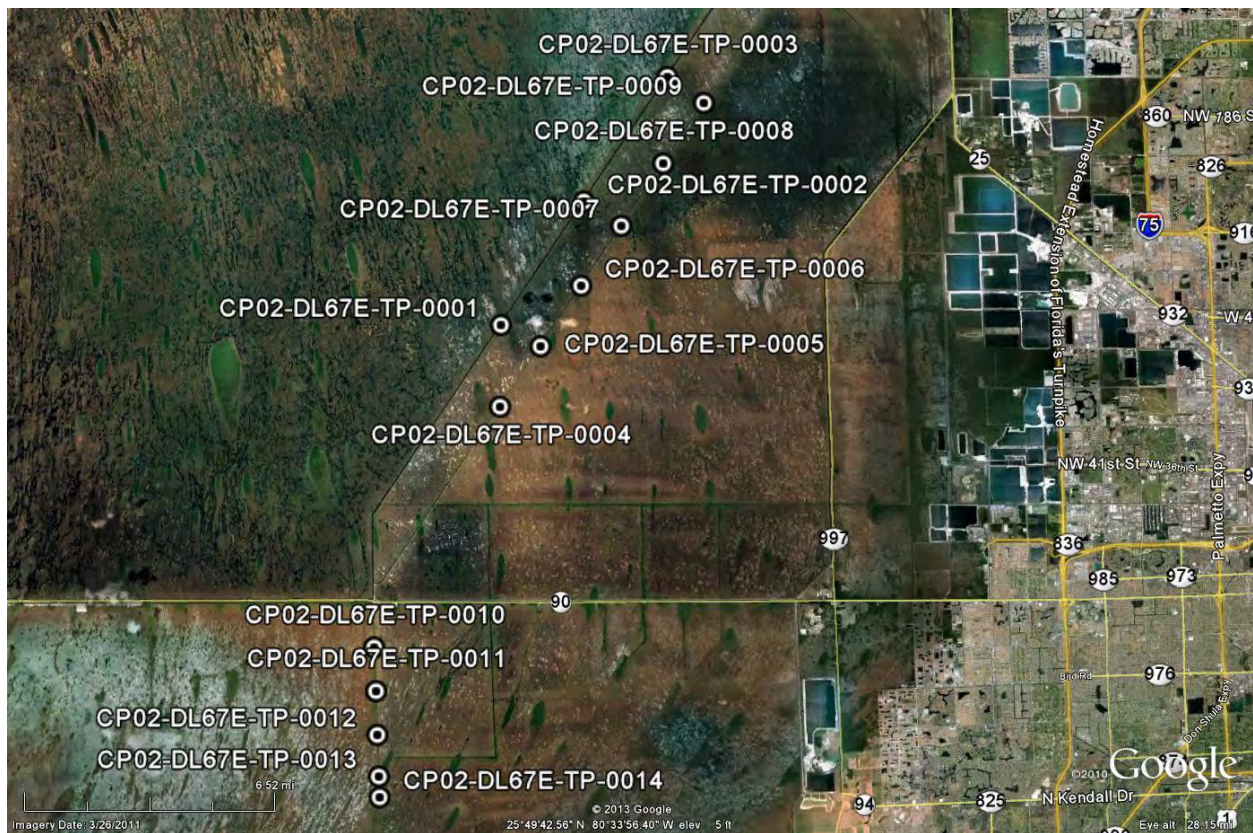


Figure G-3-1. L-67 test pit excavations (U.S. Army Corps of Engineers, 2002)

| DRILLING LOG  |              | DIVISION<br>South Atlantic                      |  | INSTALLATION<br>Jacksonville District                          |                     | SHEET 1<br>OF 2 SHEETS   |          |                 |         |
|---|--------------|---|--|--|---------------------|--|----------|-----------------|---------|
| 1. PROJECT<br>US DOI Modified Waters to ENP<br>L-67 Extension   |              |   |  | 9. SIZE AND TYPE OF BIT See Remarks                            |                     |  |          |                 |         |
| 2. BORING DESIGNATION<br>CP02-DL67E-TP-0001   |              | LOCATION COORDINATES<br>X = 781,188 Y = 557,009 |  | 10. COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. Ft.)     |                     | HORIZONTAL<br>NAD83<br>VERTICAL<br>NGVD29                                      |          |                 |         |
| 3. DRILLING AGENCY<br>Corps of Engineers - CESAJ  |              | CONTRACTOR FILE NO.                             |  | 11. MANUFACTURER'S DESIGNATION OF DRILL<br>Backhoe             |                     | <input type="checkbox"/> AUTO HAMMER<br><input type="checkbox"/> MANUAL HAMMER |          |                 |         |
| 4. NAME OF DRILLER<br>H & H Land  |              |   |  | 12. TOTAL SAMPLES<br>1   |                     | DISTURBED<br>0<br>UNDISTURBED (UD)   |          |                 |         |
| 5. DIRECTION OF BORING<br><input checked="" type="checkbox"/> VERTICAL<br><input type="checkbox"/> INCLINED |              | DEG. FROM<br>VERTICAL                           |  | 13. TOTAL NUMBER CORE BOXES<br>0                               |                     | 14. ELEVATION GROUND WATER: Not Encountered                                    |          |                 |         |
| 6. THICKNESS OF OVERBURDEN<br>N/A   |              | 15. DATE BORING<br>06-12-02                     |  | 16. ELEVATION TOP OF BORING<br>15.0 Ft.                        |                     | STARTED<br>06-12-02<br>COMPLETED<br>06-12-02                                   |          |                 |         |
| 7. DEPTH DRILLED INTO ROCK<br>N/A   |              | 17. TOTAL RECOVERY FOR BORING<br>N/A            |  | 18. SIGNATURE AND TITLE OF INSPECTOR<br>Steve Myers, Geologist |                     |  |          |                 |         |
| 8. TOTAL DEPTH OF BORING<br>10.0 Ft.  |              |   |  |  |                     |  |          |                 |         |
| ELEV.   | DEPTH        | LEGEND  | CLASSIFICATION OF MATERIALS  | %<br>REC.  | BOX<br>OR<br>SAMPLE | ROD<br>OR<br>UD  | REMARKS  | BLOWS/<br>1 FT. | N-VALUE |
| 15.0  | 0.0          |   | FILL, gravelly, mostly subangular to rounded fine to coarse gravel-sized limestone, some subangular to rounded fine to coarse-grained sand-sized carbonate, little silt, few cobble-sized limestone, strong reaction with HCl, moist, gray |  |                     |  | 15.0     |                 |         |
|   |              |   |  |  |                     |  | Test Pit |                 |         |
| 5.0   | 10.0         |   |  |  |                     |  | 5.0      |                 |         |
| NOTES:  |              |   |  |  |                     |  |          |                 |         |
| 1. USACE Jacksonville is the custodian for these original files.  |              |   |  |  |                     |  |          |                 |         |
| 2. Soils are field visually classified in accordance with the Unified Soils Classification System.          |              |   |  |  |                     |  |          |                 |         |
| 3. Laboratory Testing Results   |              |   |  |  |                     |  |          |                 |         |
| SAMPLE ID   | SAMPLE DEPTH | LABORATORY CLASSIFICATION                       |  |  |                     |  |          |                 |         |
| 1   | 0.0/10.0     | GW-GM*  |  |  |                     |  |          |                 |         |

Boring Designation CP02-DL67E-TP-0001

| DRILLING LOG (Cont. Sheet)                      |       |        | INSTALLATION<br>Jacksonville District                                     |           |                     | SHEET 3<br>OF 2 SHEETS |         |                 |         |
|---|-------|--------|---|-----------|---------------------|------------------------|---------|-----------------|---------|
| PROJECT<br>US DOI Modified Waters to ENP        |       |        | COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. FL.)                    |           | HORIZONTAL<br>NAD83 | VERTICAL<br>NGVD29     |         |                 |         |
| LOCATION COORDINATES<br>X = 781,188 Y = 557,009 |       |        | ELEVATION TOP OF BORING<br>15.0 Ft.                                       |           |                     |                        |         |                 |         |
| ELEV.   | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS   | %<br>REC. | BOX<br>OR<br>SAMPLE | ROD<br>OR<br>UD        | REMARKS | BLOWS/<br>1 FT. | N-VALUE |
|   |       |        | *Lab visual classification based on gradation curve. No Atterberg limits. |           |                     |                        |         |                 |         |

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| DRILLING LOG  |              | DIVISION<br>South Atlantic                      |  | INSTALLATION<br>Jacksonville District                          |                     | SHEET 1<br>OF 2 SHEETS   |          |                 |         |
|---|--------------|---|--|--|---------------------|--|----------|-----------------|---------|
| 1. PROJECT<br>US DOI Modified Waters to ENP<br>L-67 Extension   |              |   |  | 9. SIZE AND TYPE OF BIT See Remarks                            |                     |  |          |                 |         |
| 2. BORING DESIGNATION<br>CP02-DL67E-TP-0002   |              | LOCATION COORDINATES<br>X = 792,572 Y = 573,843 |  | 10. COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. Ft.)     |                     | HORIZONTAL<br>NAD83<br>VERTICAL<br>NGVD29                                      |          |                 |         |
| 3. DRILLING AGENCY<br>Corps of Engineers - CESAJ  |              | CONTRACTOR FILE NO.                             |  | 11. MANUFACTURER'S DESIGNATION OF DRILL<br>Backhoe             |                     | <input type="checkbox"/> AUTO HAMMER<br><input type="checkbox"/> MANUAL HAMMER |          |                 |         |
| 4. NAME OF DRILLER<br>H & H Land  |              |   |  | 12. TOTAL SAMPLES<br>1   |                     | DISTURBED<br>0<br>UNDISTURBED (UD)   |          |                 |         |
| 5. DIRECTION OF BORING<br><input checked="" type="checkbox"/> VERTICAL<br><input type="checkbox"/> INCLINED |              | DEG. FROM<br>VERTICAL                           |  | 13. TOTAL NUMBER CORE BOXES<br>0                               |                     | 14. ELEVATION GROUND WATER: Not Encountered                                    |          |                 |         |
| 6. THICKNESS OF OVERBURDEN<br>N/A   |              | 15. DATE BORING<br>06-12-02                     |  | 16. ELEVATION TOP OF BORING<br>15.5 Ft.                        |                     | STARTED<br>06-12-02<br>COMPLETED<br>06-12-02                                   |          |                 |         |
| 7. DEPTH DRILLED INTO ROCK<br>N/A   |              | 17. TOTAL RECOVERY FOR BORING<br>N/A            |  | 18. SIGNATURE AND TITLE OF INSPECTOR<br>Steve Myers, Geologist |                     |  |          |                 |         |
| 8. TOTAL DEPTH OF BORING<br>10.0 Ft.  |              |   |  |  |                     |  |          |                 |         |
| ELEV.   | DEPTH        | LEGEND  | CLASSIFICATION OF MATERIALS  | %<br>REC.  | BOX<br>OR<br>SAMPLE | RCD<br>OR<br>UD  | REMARKS  | BLOWS/<br>1 FT. | N-VALUE |
| 15.5  | 0.0          |   | FILL, gravelly, mostly fine to coarse gravel-sized limestone, some angular to subangular fine to coarse-grained sand-sized carbonate, little silt, strong reaction with HCl, dry, gray |  |                     |  | 15.5     |                 |         |
|   |              |   | At El. 11.5 Ft., few cobble-sized limestone  |  |                     |  | Test Pit |                 |         |
| 5.5   | 10.0         |   |  |  |                     |  | 5.5      |                 |         |
| NOTES:  |              |   |  |  |                     |  |          |                 |         |
| 1. USACE Jacksonville is the custodian for these original files.  |              |   |  |  |                     |  |          |                 |         |
| 2. Soils are field visually classified in accordance with the Unified Soils Classification System.          |              |   |  |  |                     |  |          |                 |         |
| 3. Laboratory Testing Results   |              |   |  |  |                     |  |          |                 |         |
| SAMPLE ID   | SAMPLE DEPTH | LABORATORY CLASSIFICATION                       |  |  |                     |  |          |                 |         |
| 1   | 0.0/10.0     | GP*   |  |  |                     |  |          |                 |         |

Boring Designation CP02-DL67E-TP-0002

| DRILLING LOG (Cont. Sheet)                      |       |        | INSTALLATION<br>Jacksonville District                                     |           |                     | SHEET 3<br>OF 2 SHEETS |         |                 |         |
|---|-------|--------|---|-----------|---------------------|------------------------|---------|-----------------|---------|
| PROJECT<br>US DOI Modified Waters to ENP        |       |        | COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. FL.)                    |           | HORIZONTAL<br>NAD83 | VERTICAL<br>NGVD29     |         |                 |         |
| LOCATION COORDINATES<br>X = 792,572 Y = 573,843 |       |        | ELEVATION TOP OF BORING<br>15.5 Ft.                                       |           |                     |                        |         |                 |         |
| ELEV.   | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS   | %<br>REC. | BOX<br>OR<br>SAMPLE | ROD<br>OR<br>UD        | REMARKS | BLOWS/<br>1 FT. | N-VALUE |
|   |       |        | *Lab visual classification based on gradation curve. No Atterberg limits. |           |                     |                        |         |                 |         |

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| DRILLING LOG  |              | DIVISION<br>South Atlantic                      |  | INSTALLATION<br>Jacksonville District                          |                     | SHEET 1<br>OF 2 SHEETS   |          |                 |         |
|---|--------------|---|--|--|---------------------|--|----------|-----------------|---------|
| 1. PROJECT<br>US DOI Modified Waters to ENP<br>L-67 Extension   |              |   |  | 9. SIZE AND TYPE OF BIT See Remarks                            |                     |  |          |                 |         |
| 2. BORING DESIGNATION<br>CP02-DL67E-TP-0003   |              | LOCATION COORDINATES<br>X = 804,064 Y = 590,838 |  | 10. COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. Ft.)     |                     | HORIZONTAL<br>NAD83<br>VERTICAL<br>NGVD29                                      |          |                 |         |
| 3. DRILLING AGENCY<br>Corps of Engineers - CESA/J   |              | CONTRACTOR FILE NO.                             |  | 11. MANUFACTURER'S DESIGNATION OF DRILL<br>Backhoe             |                     | <input type="checkbox"/> AUTO HAMMER<br><input type="checkbox"/> MANUAL HAMMER |          |                 |         |
| 4. NAME OF DRILLER<br>H & H Land  |              |   |  | 12. TOTAL SAMPLES<br>1   |                     | DISTURBED<br>0<br>UNDISTURBED (UD)   |          |                 |         |
| 5. DIRECTION OF BORING<br><input checked="" type="checkbox"/> VERTICAL<br><input type="checkbox"/> INCLINED |              | DEG. FROM<br>VERTICAL                           |  | 13. TOTAL NUMBER CORE BOXES<br>0                               |                     | 14. ELEVATION GROUND WATER: Not Encountered                                    |          |                 |         |
| 6. THICKNESS OF OVERBURDEN<br>N/A   |              | 15. DATE BORING<br>06-12-02                     |  | 16. ELEVATION TOP OF BORING<br>15.6 Ft.                        |                     | STARTED<br>06-12-02<br>COMPLETED<br>06-12-02                                   |          |                 |         |
| 7. DEPTH DRILLED INTO ROCK<br>N/A   |              | 17. TOTAL RECOVERY FOR BORING<br>N/A            |  | 18. SIGNATURE AND TITLE OF INSPECTOR<br>Steve Myers, Geologist |                     |  |          |                 |         |
| 8. TOTAL DEPTH OF BORING<br>10.0 Ft.  |              |   |  |  |                     |  |          |                 |         |
| ELEV.   | DEPTH        | LEGEND  | CLASSIFICATION OF MATERIALS  | %<br>REC.  | BOX<br>OR<br>SAMPLE | RCD<br>OR<br>UD  | REMARKS  | BLOWS/<br>1 FT. | N-VALUE |
| 15.6  | 0.0          |   | FILL, gravelly, mostly subrounded to rounded fine to coarse gravel-sized limestone, little subangular to rounded fine to coarse-grained sand-sized carbonate, little silt, few cobble-sized limestone, moist, gray |  |                     |  | 15.6     |                 |         |
|   |              |   |  |  |                     |  | Test Pit |                 |         |
| 5.6   | 10.0         |   |  |  |                     |  | 5.6      |                 |         |
| NOTES:  |              |   |  |  |                     |  |          |                 |         |
| 1. USACE Jacksonville is the custodian for these original files.  |              |   |  |  |                     |  |          |                 |         |
| 2. Soils are field visually classified in accordance with the Unified Soils Classification System.          |              |   |  |  |                     |  |          |                 |         |
| 3. Laboratory Testing Results   |              |   |  |  |                     |  |          |                 |         |
| SAMPLE ID   | SAMPLE DEPTH | LABORATORY CLASSIFICATION                       |  |  |                     |  |          |                 |         |
| 1   | 0.0/10.0     | GP-GM*  |  |  |                     |  |          |                 |         |

Boring Designation CP02-DL67E-TP-0003

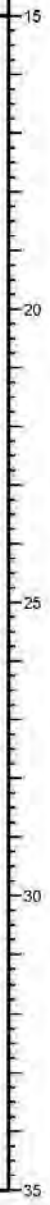
| DRILLING LOG (Cont. Sheet)                      |       |        | INSTALLATION<br>Jacksonville District                                     |           |                     | SHEET 3<br>OF 2 SHEETS |         |                 |         |
|---|-------|--------|---|-----------|---------------------|------------------------|---------|-----------------|---------|
| PROJECT<br>US DOI Modified Waters to ENP        |       |        | COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. FL.)                    |           | HORIZONTAL<br>NAD83 | VERTICAL<br>NGVD29     |         |                 |         |
| LOCATION COORDINATES<br>X = 804,064 Y = 590,838 |       |        | ELEVATION TOP OF BORING<br>15.6 Ft.                                       |           |                     |                        |         |                 |         |
| ELEV.   | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS   | %<br>REC. | BOX<br>OR<br>SAMPLE | ROD<br>OR<br>UD        | REMARKS | BLOWS/<br>1 FT. | N-VALUE |
|   |       |        | *Lab visual classification based on gradation curve. No Atterberg limits. |           |                     |                        |         |                 |         |

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| DRILLING LOG  |       |        | DIVISION<br>South Atlantic   |              | INSTALLATION<br>Jacksonville District                          |           | SHEET 1<br>OF 2 SHEETS  |             |         |
|---|-------|--------|--|--------------|--|-----------|---|-------------|---------|
| 1. PROJECT<br>US DOI Modified Waters to ENP<br>L-67 Extension   |       |        |  |              | 9. SIZE AND TYPE OF BIT See Remarks                            |           |   |             |         |
| 2. BORING DESIGNATION<br>CP02-DL67E-TP-0004   |       |        |  |              | LOCATION COORDINATES<br>X = 781,054 Y = 545,860                |           | 10. COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. Ft.) NAD83 NGVD29   |             |         |
| 3. DRILLING AGENCY<br>Corps of Engineers - CESAJ  |       |        |  |              | CONTRACTOR FILE NO.  |           | 11. MANUFACTURER'S DESIGNATION OF DRILL<br>Backhoe <input type="checkbox"/> AUTO HAMMER<br><input type="checkbox"/> MANUAL HAMMER |             |         |
| 4. NAME OF DRILLER<br>H & H Land  |       |        |  |              | 12. TOTAL SAMPLES<br>2   |           | DISTURBED<br>0  |             |         |
| 5. DIRECTION OF BORING<br><input checked="" type="checkbox"/> VERTICAL<br><input type="checkbox"/> INCLINED |       |        |  |              | DEG. FROM VERTICAL   |           | BEARING   |             |         |
| 6. THICKNESS OF OVERBURDEN<br>N/A   |       |        |  |              | 13. TOTAL NUMBER CORE BOXES<br>0                               |           | 14. ELEVATION GROUND WATER<br>6.1 Ft.   |             |         |
| 7. DEPTH DRILLED INTO ROCK<br>N/A   |       |        |  |              | 15. DATE BORING<br>06-19-02                                    |           | STARTED<br>06-19-02   |             |         |
| 8. TOTAL DEPTH OF BORING<br>10.0 Ft.  |       |        |  |              | 16. ELEVATION TOP OF BORING<br>10.1 Ft.                        |           | 17. TOTAL RECOVERY FOR BORING<br>N/A  |             |         |
|   |       |        |  |              | 18. SIGNATURE AND TITLE OF INSPECTOR<br>Steve Myers, Geologist |           |   |             |         |
| ELEV.   | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS  | % REC.       | BOX OR SAMPLE  | ROD OR UD | REMARKS   | BLOWS/1 FT. | N-VALUE |
| 10.1  | 0.0   |        | FILL, gravelly, mostly angular to subrounded fine to coarse gravel-sized limestone, some silt, little cobble-sized limestone, few angular to subrounded fine to coarse-grained sand-sized carbonate, strong reaction with HCl, brown |              |  |           | 10.1  |             |         |
|   |       |        | At El. 6.1 Ft., wet  |              | 1  |           | Test Pit  |             |         |
| 4.1   | 6.0   |        | PEAT, fibrous, black (PT)  |              |  |           | 3.6   |             |         |
|   |       |        |  |              | 2  |           | Test Pit  |             |         |
| 0.1   | 10.0  |        |  |              |  |           | 0.1   |             |         |
|   |       |        | NOTES:<br>1. USACE Jacksonville is the custodian for these original files.<br>2. Soils are field visually classified in accordance with the Unified Soils Classification System.<br>3. Laboratory Testing Results                    |              |  |           |   |             |         |
|   |       |        | SAMPLE ID  | SAMPLE DEPTH | LABORATORY CLASSIFICATION                                      |           |   |             |         |
|   |       |        | 1  | 0.0/6.5      | GW*  |           |   |             |         |

Boring Designation CP02-DL67E-TP-0004

| DRILLING LOG (Cont. Sheet)                      |       |        | INSTALLATION<br>Jacksonville District                                     |           | SHEET 3<br>OF 2 SHEETS |                    |         |                 |         |
|---|-------|--------|---|-----------|------------------------|--------------------|---------|-----------------|---------|
| PROJECT<br>US DOI Modified Waters to ENP        |       |        | COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. FL.)                    |           | HORIZONTAL<br>NAD83    | VERTICAL<br>NGVD29 |         |                 |         |
| LOCATION COORDINATES<br>X = 781.054 Y = 545.860 |       |        | ELEVATION TOP OF BORING<br>10.1 Ft.                                       |           |                        |                    |         |                 |         |
| ELEV.   | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS   | %<br>REC. | BOX<br>OR<br>SAMPLE    | ROD<br>OR<br>UD    | REMARKS | BLOWS/<br>1 FT. | N-VALUE |
|   |       |        | *Lab visual classification based on gradation curve. No Atterberg limits. |           |                        |                    |         |                 |         |



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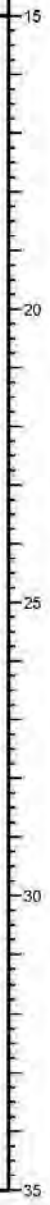
| DRILLING LOG  |              |                           | DIVISION<br>South Atlantic  |           | INSTALLATION<br>Jacksonville District                          |                 | SHEET 1<br>OF 2 SHEETS   |                 |         |
|---|--------------|---------------------------|---|-----------|--|-----------------|--|-----------------|---------|
| 1. PROJECT<br>US DOI Modified Waters to ENP<br>L-67 Extension   |              |                           |   |           | 9. SIZE AND TYPE OF BIT<br>See Remarks                         |                 |  |                 |         |
| 2. BORING DESIGNATION<br>CP02-DL67E-TP-0005   |              |                           | LOCATION COORDINATES<br>X = 786,627 Y = 554,101   |           | 10. COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. Ft.)     |                 | HORIZONTAL<br>NAD83<br>VERTICAL<br>NGVD29                                      |                 |         |
| 3. DRILLING AGENCY<br>Corps of Engineers - CESA/J   |              |                           | CONTRACTOR FILE NO.   |           | 11. MANUFACTURER'S DESIGNATION OF DRILL<br>Backhoe             |                 | <input type="checkbox"/> AUTO HAMMER<br><input type="checkbox"/> MANUAL HAMMER |                 |         |
| 4. NAME OF DRILLER<br>H & H Land  |              |                           |   |           | 12. TOTAL SAMPLES<br>2   |                 | DISTURBED<br>0<br>UNDISTURBED (UD)   |                 |         |
| 5. DIRECTION OF BORING<br><input checked="" type="checkbox"/> VERTICAL<br><input type="checkbox"/> INCLINED |              |                           |   |           | 13. TOTAL NUMBER CORE BOXES<br>0                               |                 | 14. ELEVATION GROUND WATER<br>3.6 Ft.  |                 |         |
| 6. THICKNESS OF OVERBURDEN<br>N/A   |              |                           |   |           | 15. DATE BORING<br>06-19-02                                    |                 | STARTED<br>06-19-02<br>COMPLETED   |                 |         |
| 7. DEPTH DRILLED INTO ROCK<br>N/A   |              |                           |   |           | 16. ELEVATION TOP OF BORING<br>9.1 Ft.                         |                 | 17. TOTAL RECOVERY FOR BORING<br>N/A   |                 |         |
| 8. TOTAL DEPTH OF BORING<br>10.0 Ft.  |              |                           |   |           | 18. SIGNATURE AND TITLE OF INSPECTOR<br>Steve Myers, Geologist |                 |  |                 |         |
| ELEV.   | DEPTH        | LEGEND                    | CLASSIFICATION OF MATERIALS   | %<br>REC. | NO.<br>OF<br>SAMPLE<br>BOXES                                   | ROD<br>OR<br>UD | REMARKS  | BLOWS/<br>1 FT. | N-VALUE |
| 9.1   | 0.0          |                           | FILL, gravelly, mostly angular to subrounded fine to coarse gravel-sized limestone, little silt, few cobble-sized limestone, few subangular to subrounded fine to coarse-grained sand-sized carbonate, brown. |           |  |                 | 9.1  |                 |         |
|   |              |                           |   | 1         |  |                 | Test Pit   |                 |         |
| 2.1   | 7.0          |                           | PEAT, wet, fibrous, black (PT)  |           | 2  |                 | 2.1  |                 |         |
|   |              |                           |   |           |  |                 | Test Pit   |                 |         |
| -0.9  | 10.0         |                           |   |           |  |                 | -0.9   |                 |         |
| NOTES:  |              |                           |   |           |  |                 |  |                 |         |
| 1. USACE Jacksonville is the custodian for these original files.  |              |                           |   |           |  |                 |  |                 |         |
| 2. Soils are field visually classified in accordance with the Unified Soils Classification System.          |              |                           |   |           |  |                 |  |                 |         |
| 3. Laboratory Testing Results   |              |                           |   |           |  |                 |  |                 |         |
| SAMPLE ID   | SAMPLE DEPTH | LABORATORY CLASSIFICATION |   |           |  |                 |  |                 |         |
| 1   | 0.0/7.0      | GP*                       |   |           |  |                 |  |                 |         |

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(Continued)

Boring Designation CP02-DL67E-TP-0005

| DRILLING LOG (Cont. Sheet)                      |       |        | INSTALLATION<br>Jacksonville District                                     |           |                     | SHEET 3<br>OF 2 SHEETS |         |                 |         |
|---|-------|--------|---|-----------|---------------------|------------------------|---------|-----------------|---------|
| PROJECT<br>US DOI Modified Waters to ENP        |       |        | COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. FL.)                    |           | HORIZONTAL<br>NAD83 | VERTICAL<br>NGVD29     |         |                 |         |
| LOCATION COORDINATES<br>X = 786,627 Y = 554,101 |       |        | ELEVATION TOP OF BORING<br>9.1 Ft.  |           |                     |                        |         |                 |         |
| ELEV.   | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS   | %<br>REC. | BOX<br>OR<br>SAMPLE | ROD<br>OR<br>UD        | REMARKS | BLOWS/<br>1 FT. | N-VALUE |
|   |       |        | *Lab visual classification based on gradation curve. No Atterberg limits. |           |                     |                        |         |                 |         |



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| DRILLING LOG  |       |        | DIVISION<br>South Atlantic  |           | INSTALLATION<br>Jacksonville District                          |                 | SHEET 1<br>OF 2 SHEETS   |                 |         |
|---|-------|--------|---|-----------|--|-----------------|--|-----------------|---------|
| 1. PROJECT<br>US DOI Modified Waters to ENP<br>L-67 Extension   |       |        |   |           | 9. SIZE AND TYPE OF BIT See Remarks                            |                 |  |                 |         |
| 2. BORING DESIGNATION<br>CP02-DL67E-TP-0006   |       |        | LOCATION COORDINATES<br>X = 792,210 Y = 562,354   |           | 10. COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. Ft.)     |                 | HORIZONTAL<br>NAD83<br>VERTICAL<br>NGVD29                                      |                 |         |
| 3. DRILLING AGENCY<br>Corps of Engineers - CESA/J   |       |        | CONTRACTOR FILE NO.   |           | 11. MANUFACTURER'S DESIGNATION OF DRILL<br>Backhoe             |                 | <input type="checkbox"/> AUTO HAMMER<br><input type="checkbox"/> MANUAL HAMMER |                 |         |
| 4. NAME OF DRILLER<br>H & H Land  |       |        |   |           | 12. TOTAL SAMPLES<br>2   |                 | DISTURBED<br>0<br>UNDISTURBED (UD)   |                 |         |
| 5. DIRECTION OF BORING<br><input checked="" type="checkbox"/> VERTICAL<br><input type="checkbox"/> INCLINED |       |        |   |           | 13. TOTAL NUMBER CORE BOXES<br>0                               |                 | 14. ELEVATION GROUND WATER<br>5.5 Ft.  |                 |         |
| 6. THICKNESS OF OVERBURDEN<br>N/A   |       |        |   |           | 15. DATE BORING<br>06-19-02                                    |                 | STARTED<br>06-19-02<br>COMPLETED<br>06-19-02                                   |                 |         |
| 7. DEPTH DRILLED INTO ROCK<br>N/A   |       |        |   |           | 16. ELEVATION TOP OF BORING<br>10.7 Ft.                        |                 | 17. TOTAL RECOVERY FOR BORING<br>N/A   |                 |         |
| 8. TOTAL DEPTH OF BORING<br>9.5 Ft.   |       |        |   |           | 18. SIGNATURE AND TITLE OF INSPECTOR<br>Steve Myers, Geologist |                 |  |                 |         |
| ELEV.   | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS   | %<br>REC. | NO.<br>OF<br>SAMPLE<br>BOXES                                   | ROD<br>OR<br>UD | REMARKS  | BLOWS/<br>1 FT. | N-VALUE |
| 10.7  | 0.0   |        | FILL, gravelly, mostly angular to subrounded fine to coarse gravel-sized limestone, little silt, little cobble-sized limestone, few subangular to rounded fine to coarse-grained sand-sized carbonate, strong reaction with HCl, moist, brown |           |  |                 | 10.7   |                 |         |
|   |       |        | At El. 5.3 Ft., wet   |           |  |                 | Test Pit   |                 |         |
| 3.5   | 7.2   |        | PEAT, wet, fibrous, black/brown (PT)  |           | 2  |                 | 3.5  |                 |         |
|   |       |        |   |           |  |                 | Test Pit   |                 |         |
| 1.2   | 9.5   |        | NOTES:<br>1. USACE Jacksonville is the custodian for these original files.<br>2. Soils are field visually classified in accordance with the Unified Soils Classification System.<br>3. Laboratory Testing Results                             |           |  |                 | 1.2  |                 |         |
|   |       |        | SAMPLE ID      SAMPLE DEPTH      LABORATORY CLASSIFICATION<br>1      0.0/7.2      GP*   |           |  |                 |  |                 |         |
|   |       |        | *Lab visual classification based on gradation   |           |  |                 |  |                 |         |

Boring Designation CP02-DL67E-TP-0006

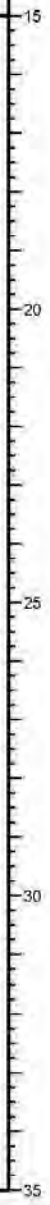
| DRILLING LOG (Cont. Sheet)                      |       |        | INSTALLATION<br>Jacksonville District                  |           |                     | SHEET 3<br>OF 2 SHEETS |         |                 |         |
|---|-------|--------|--|-----------|---------------------|------------------------|---------|-----------------|---------|
| PROJECT<br>US DOI Modified Waters to ENP        |       |        | COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. FL.) |           | HORIZONTAL<br>NAD83 | VERTICAL<br>NGVD29     |         |                 |         |
| LOCATION COORDINATES<br>X = 792,210 Y = 582,354 |       |        | ELEVATION TOP OF BORING<br>10.7 Ft.                    |           |                     |                        |         |                 |         |
| ELEV.   | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS                            | %<br>REC. | BOX<br>OR<br>SAMPLE | ROD<br>OR<br>UD        | REMARKS | BLOWS/<br>1 FT. | N-VALUE |
|   |       |        | curve. No Atterberg limits.                            |           |                     |                        |         |                 |         |

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| DRILLING LOG  |              | DIVISION<br>South Atlantic                      |   | INSTALLATION<br>Jacksonville District                          |                              | SHEET 1<br>OF 2 SHEETS   |          |                 |         |
|---|--------------|---|---|--|------------------------------|--|----------|-----------------|---------|
| 1. PROJECT<br>US DOI Modified Waters to ENP<br>L-67 Extension   |              |   |   | 9. SIZE AND TYPE OF BIT<br>See Remarks                         |                              |  |          |                 |         |
| 2. BORING DESIGNATION<br>CP02-DL67E-TP-0007   |              | LOCATION COORDINATES<br>X = 797,726 Y = 570,520 |   | 10. COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. Ft.)     |                              | HORIZONTAL<br>NAD83<br>VERTICAL<br>NGVD29                                      |          |                 |         |
| 3. DRILLING AGENCY<br>Corps of Engineers - CESA/J   |              | CONTRACTOR FILE NO.                             |   | 11. MANUFACTURER'S DESIGNATION OF DRILL<br>Backhoe             |                              | <input type="checkbox"/> AUTO HAMMER<br><input type="checkbox"/> MANUAL HAMMER |          |                 |         |
| 4. NAME OF DRILLER<br>H & H Land  |              |   |   | 12. TOTAL SAMPLES<br>2   |                              | DISTURBED<br>0<br>UNDISTURBED (UD)   |          |                 |         |
| 5. DIRECTION OF BORING<br><input checked="" type="checkbox"/> VERTICAL<br><input type="checkbox"/> INCLINED |              | DEG. FROM<br>VERTICAL                           |   | 13. TOTAL NUMBER CORE BOXES<br>0                               |                              |  |          |                 |         |
| 6. THICKNESS OF OVERBURDEN<br>N/A   |              |   |   | 14. ELEVATION GROUND WATER<br>3.6 Ft.                          |                              |  |          |                 |         |
| 7. DEPTH DRILLED INTO ROCK<br>N/A   |              |   |   | 15. DATE BORING<br>06-19-02                                    |                              | STARTED<br>06-19-02<br>COMPLETED<br>06-19-02                                   |          |                 |         |
| 8. TOTAL DEPTH OF BORING<br>10.0 Ft.  |              |   |   | 16. ELEVATION TOP OF BORING<br>9.6 Ft.                         |                              |  |          |                 |         |
|   |              |   |   | 17. TOTAL RECOVERY FOR BORING<br>N/A                           |                              |  |          |                 |         |
|   |              |   |   | 18. SIGNATURE AND TITLE OF INSPECTOR<br>Steve Myers, Geologist |                              |  |          |                 |         |
| ELEV.   | DEPTH        | LEGEND  | CLASSIFICATION OF MATERIALS   | %<br>REC.  | NO.<br>OF<br>SAMPLE<br>BOXES | RCD<br>OR<br>UD  | REMARKS  | BLOWS/<br>1 FT. | N-VALUE |
| 9.6   | 0.0          |   | FILL, gravelly, mostly angular to subrounded fine to coarse gravel-sized limestone, little cobble-sized limestone, little silt, few fine to coarse-grained sand-sized carbonate, strong reaction with HCl, dry, brown |  |                              |  | 9.6      |                 |         |
|   |              |   | At El. 5.6 Ft., gray  |  |                              |  | Test Pit |                 |         |
|   |              |   | At El. 3.6 Ft., wet   |  |                              |  |          |                 |         |
| 1.4   | 8.2          |   | PEAT, wet, fibrous, black/brown (PT)  |  |                              |  | 1.4      |                 |         |
|   |              |   |   | 2  |                              |  | Test Pit |                 |         |
| -0.4  | 10.0         |   |   |  |                              |  | -0.4     |                 |         |
| NOTES:  |              |   |   |  |                              |  |          |                 |         |
| 1. USACE Jacksonville is the custodian for these original files.  |              |   |   |  |                              |  |          |                 |         |
| 2. Soils are field visually classified in accordance with the Unified Soils Classification System.          |              |   |   |  |                              |  |          |                 |         |
| 3. Laboratory Testing Results   |              |   |   |  |                              |  |          |                 |         |
| SAMPLE ID   | SAMPLE DEPTH | LABORATORY CLASSIFICATION                       |   |  |                              |  |          |                 |         |
| 1   | 0.0/8.2      | GP-GM*  |   |  |                              |  |          |                 |         |

Boring Designation CP02-DL67E-TP-0007

| DRILLING LOG (Cont. Sheet)                      |       |        | INSTALLATION<br>Jacksonville District                                     |           |                     | SHEET 3<br>OF 2 SHEETS |         |                 |         |
|---|-------|--------|---|-----------|---------------------|------------------------|---------|-----------------|---------|
| PROJECT<br>US DOI Modified Waters to ENP        |       |        | COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. FL.)                    |           | HORIZONTAL<br>NAD83 | VERTICAL<br>NGVD29     |         |                 |         |
| LOCATION COORDINATES<br>X = 797,726 Y = 570,520 |       |        | ELEVATION TOP OF BORING<br>9.6 Ft.  |           |                     |                        |         |                 |         |
| ELEV.   | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS   | %<br>REC. | BOX<br>OR<br>SAMPLE | ROD<br>OR<br>UD        | REMARKS | BLOWS/<br>1 FT. | N-VALUE |
|   |       |        | *Lab visual classification based on gradation curve. No Atterberg limits. |           |                     |                        |         |                 |         |



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| DRILLING LOG  |       |        | DIVISION<br>South Atlantic   |           | INSTALLATION<br>Jacksonville District                      |                 | SHEET 1<br>OF 1 SHEETS   |                 |         |
|---|-------|--------|--|-----------|--|-----------------|--|-----------------|---------|
| 1. PROJECT<br>US DOI Modified Waters to ENP<br>L-67 Extension   |       |        |  |           | 9. SIZE AND TYPE OF BIT See Remarks                        |                 |  |                 |         |
| 2. BORING DESIGNATION<br>CP02-DL67E-TP-0008   |       |        |  |           | 10. COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. Ft.) |                 | HORIZONTAL<br>NAD83  |                 |         |
| 3. DRILLING AGENCY<br>Corps of Engineers - CESAJ  |       |        |  |           | 11. MANUFACTURER'S DESIGNATION OF DRILL<br>Backhoe         |                 | VERTICAL<br>NGVD29   |                 |         |
| 4. NAME OF DRILLER<br>H & H Land  |       |        |  |           | 12. TOTAL SAMPLES<br>2                                     |                 | DISTURBED<br>0   |                 |         |
| 5. DIRECTION OF BORING<br><input checked="" type="checkbox"/> VERTICAL<br><input type="checkbox"/> INCLINED |       |        |  |           | 13. TOTAL NUMBER CORE BOXES<br>0                           |                 | 14. ELEVATION GROUND WATER<br>4.7 Ft.                          |                 |         |
| 6. THICKNESS OF OVERBURDEN<br>N/A   |       |        |  |           | 15. DATE BORING<br>06-20-02                                |                 | STARTED<br>06-20-02  |                 |         |
| 7. DEPTH DRILLED INTO ROCK<br>N/A   |       |        |  |           | 16. ELEVATION TOP OF BORING<br>10.2 Ft.                    |                 | COMPLETED<br>06-20-02  |                 |         |
| 8. TOTAL DEPTH OF BORING<br>9.0 Ft.   |       |        |  |           | 17. TOTAL RECOVERY FOR BORING<br>N/A                       |                 | 18. SIGNATURE AND TITLE OF INSPECTOR<br>Steve Myers, Geologist |                 |         |
| ELEV.   | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS  | %<br>REC. | BOX<br>OR<br>SAMPLE  | ROD<br>OR<br>UD | REMARKS  | BLOWS/<br>1 FT. | N-VALUE |
| 10.2  | 0.0   |        | FILL, cobbles, mostly angular cobble-sized limestone, little silt; few sand, strong reaction with HCl, dry, gray   |           |  |                 | 10.2   |                 |         |
|   |       |        |  |           |  |                 | Test Pit   |                 |         |
|   |       |        |  |           |  |                 |  |                 |         |
| 2.7   | 7.5   |        | At El. 5.2 Ft., gravelly, some coarse gravel-sized limestone, little cobble-sized limestone<br>At El. 4.7 Ft., wet   |           |  |                 |  |                 |         |
|   |       |        |  |           |  |                 |  |                 |         |
|   |       |        | PEAT, high plasticity, soft, fibrous, interbedded with lean clay, black (PT)   |           |  |                 | 2.7  |                 |         |
| 1.2   | 9.0   |        |  |           | 2  |                 | Test Pit   |                 |         |
|   |       |        | BORING TERMINATED IN REFUSAL   |           |  |                 | 1.2  |                 |         |
|   |       |        | NOTES:<br>1. USACE Jacksonville is the custodian for these original files.<br>2. Soils are field visually classified in accordance with the Unified Soils Classification System.<br>3. Laboratory Testing Results<br>SAMPLE ID      SAMPLE DEPTH      LABORATORY CLASSIFICATION<br>1      0.0/7.5      GW* |           |  |                 |  |                 |         |
|   |       |        | *Lab visual classification based on gradation curve. No Atterberg limits.  |           |  |                 |  |                 |         |

| DRILLING LOG  |              | DIVISION<br>South Atlantic                      |   | INSTALLATION<br>Jacksonville District                      |                              | SHEET 1<br>OF 1 SHEETS   |          |                 |         |  |  |  |  |  |  |
|---|--------------|---|---|--|------------------------------|--|----------|-----------------|---------|--|--|--|--|--|--|
| 1. PROJECT<br>US DOI Modified Waters to ENP<br>L-67 Extension   |              |   |   | 9. SIZE AND TYPE OF BIT<br>See Remarks                     |                              |  |          |                 |         |  |  |  |  |  |  |
| 2. BORING DESIGNATION<br>CP02-DL67E-TP-0009   |              | LOCATION COORDINATES<br>X = 809,063 Y = 587,280 |   | 10. COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. Ft.) |                              | HORIZONTAL<br>NAD83  |          |                 |         |  |  |  |  |  |  |
| 3. DRILLING AGENCY<br>Corps of Engineers - CESAJ  |              | CONTRACTOR FILE NO.                             |   | 11. MANUFACTURER'S DESIGNATION OF DRILL<br>Backhoe         |                              | <input type="checkbox"/> AUTO HAMMER<br><input type="checkbox"/> MANUAL HAMMER |          |                 |         |  |  |  |  |  |  |
| 4. NAME OF DRILLER<br>H & H Land  |              |   |   | 12. TOTAL SAMPLES<br>2                                     |                              | DISTURBED<br>0   |          |                 |         |  |  |  |  |  |  |
| 5. DIRECTION OF BORING<br><input checked="" type="checkbox"/> VERTICAL<br><input type="checkbox"/> INCLINED |              |   |   | 13. TOTAL NUMBER CORE BOXES<br>0                           |                              | 14. ELEVATION GROUND WATER<br>4.6 Ft.  |          |                 |         |  |  |  |  |  |  |
| 6. THICKNESS OF OVERBURDEN<br>N/A   |              |   |   | 15. DATE BORING<br>06-20-02                                |                              | STARTED<br>06-20-02  |          |                 |         |  |  |  |  |  |  |
| 7. DEPTH DRILLED INTO ROCK<br>N/A   |              |   |   | 16. ELEVATION TOP OF BORING<br>10.0 Ft.                    |                              | COMPLETED<br>06-20-02  |          |                 |         |  |  |  |  |  |  |
| 8. TOTAL DEPTH OF BORING<br>9.0 Ft.   |              |   |   | 17. TOTAL RECOVERY FOR BORING<br>N/A                       |                              | 18. SIGNATURE AND TITLE OF INSPECTOR<br>Steve Myers, Geologist                 |          |                 |         |  |  |  |  |  |  |
| ELEV.   | DEPTH        | LEGEND  | CLASSIFICATION OF MATERIALS   | %<br>REC.  | NO.<br>OF<br>SAMPLE<br>BOXES | ROD<br>OR<br>UD  | REMARKS  | BLOWS/<br>1 FT. | N-VALUE |  |  |  |  |  |  |
| 10.0  | 0.0          |   | FILL, gravelly, mostly angular to subrounded fine to coarse gravel-sized limestone, little silt, few fine to coarse gravel-sized limestone, moist, brown  |  |                              |  | 10.0     |                 |         |  |  |  |  |  |  |
|   |              |   | At El. 4.6 Ft., wet   |  | 1                            |  | Test Pit |                 |         |  |  |  |  |  |  |
| 2.2   | 7.8          |   | PEAT, fibrous, black/brown (PT)   |  | 2                            |  | 2.2      |                 |         |  |  |  |  |  |  |
| 1.0   | 9.0          |   | BORING TERMINATED IN REFUSAL  |  |                              |  | 1.0      |                 |         |  |  |  |  |  |  |
|   |              |   | NOTES:<br>1. USACE Jacksonville is the custodian for these original files.<br>2. Soils are field visually classified in accordance with the Unified Soils Classification System.<br>3. Laboratory Testing Results<br><table border="1"> <thead> <tr> <th>SAMPLE ID</th> <th>SAMPLE DEPTH</th> <th>LABORATORY CLASSIFICATION</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>0.0/7.8</td> <td>GW*</td> </tr> </tbody> </table> *Lab visual classification based on gradation curve. No Atterberg limits. | SAMPLE ID  | SAMPLE DEPTH                 | LABORATORY CLASSIFICATION  | 1        | 0.0/7.8         | GW*     |  |  |  |  |  |  |
| SAMPLE ID   | SAMPLE DEPTH | LABORATORY CLASSIFICATION                       |   |  |                              |  |          |                 |         |  |  |  |  |  |  |
| 1   | 0.0/7.8      | GW*   |   |  |                              |  |          |                 |         |  |  |  |  |  |  |

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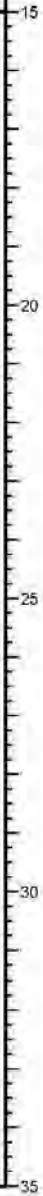
| DRILLING LOG  |       | DIVISION<br>South Atlantic                      |   | INSTALLATION<br>Jacksonville District                          |                     | SHEET 1<br>OF 2 SHEETS   |                                      |                 |         |
|---|-------|---|---|--|---------------------|--|--------------------------------------|-----------------|---------|
| 1. PROJECT<br>US DOI Modified Waters to ENP<br>L-67 Extension   |       |   |   | 9. SIZE AND TYPE OF BIT See Remarks                            |                     |  |                                      |                 |         |
| 2. BORING DESIGNATION<br>CP02-DL67E-TP-0010   |       | LOCATION COORDINATES<br>X = 763,742 Y = 513,043 |   | 10. COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. Ft.)     |                     | HORIZONTAL<br>NAD83<br>VERTICAL<br>NGVD29                                      |                                      |                 |         |
| 3. DRILLING AGENCY<br>Corps of Engineers - CESA/J   |       | CONTRACTOR FILE NO.                             |   | 11. MANUFACTURER'S DESIGNATION OF DRILL<br>Backhoe             |                     | <input type="checkbox"/> AUTO HAMMER<br><input type="checkbox"/> MANUAL HAMMER |                                      |                 |         |
| 4. NAME OF DRILLER<br>H & H Land  |       |   |   | 12. TOTAL SAMPLES<br>1   |                     | DISTURBED<br>0<br>UNDISTURBED (UD)   |                                      |                 |         |
| 5. DIRECTION OF BORING<br><input checked="" type="checkbox"/> VERTICAL<br><input type="checkbox"/> INCLINED |       | DEG. FROM<br>VERTICAL                           |   | 13. TOTAL NUMBER CORE BOXES<br>0                               |                     | 14. ELEVATION GROUND WATER<br>3.5 Ft.  |                                      |                 |         |
| 6. THICKNESS OF OVERBURDEN<br>N/A   |       | 7. DEPTH DRILLED INTO ROCK<br>N/A               |   | 15. DATE BORING<br>06-11-02                                    |                     | STARTED<br>06-11-02<br>COMPLETED<br>06-11-02                                   |                                      |                 |         |
| 8. TOTAL DEPTH OF BORING<br>10.0 Ft.  |       |   |   | 16. ELEVATION TOP OF BORING<br>13.0 Ft.                        |                     | 17. TOTAL RECOVERY FOR BORING<br>N/A   |                                      |                 |         |
|   |       |   |   | 18. SIGNATURE AND TITLE OF INSPECTOR<br>Steve Myers, Geologist |                     |  |                                      |                 |         |
| ELEV.   | DEPTH | LEGEND  | CLASSIFICATION OF MATERIALS   | %<br>REC.  | BOX<br>OR<br>SAMPLE | ROD<br>OR<br>UD  | REMARKS                              | BLOWS/<br>1 FT. | N-VALUE |
| 13.0  | 0.0   |   | FILL, sandy, some angular to subrounded fine to coarse-grained sand-sized carbonate, some gravel to boulder-sized limestone up to 3', little rounded fine-grained sand-sized quartz, little silt, dry, tan        |  |                     |  | 13.0                                 |                 |         |
|   |       |   |   |  |                     |  | Test Pit                             |                 |         |
| 3.7   | 9.3   |   |   |  |                     |  | 3.7                                  |                 |         |
| 3.5   | 9.5   |   | PEAT, moist, fibrous, black (PT)  |  |                     |  |                                      |                 |         |
| 3.0   | 10.0  |   | LIMESTONE, hard, moderately weathered, aphanitic, vuggy, brown/tan  |  |                     |  | 3.0                                  |                 |         |
|   |       |   | NOTES:<br>1. USACE Jacksonville is the custodian for these original files.<br>2. Soils are field visually classified in accordance with the Unified Soils Classification System.<br>3. Laboratory Testing Results |  |                     |  | Abbreviations:<br>NR = Not Recorded. |                 |         |
|   |       |   | SAMPLE ID      SAMPLE DEPTH      LABORATORY CLASSIFICATION  |  |                     |  |                                      |                 |         |
|   |       |   | 1      0.0/9.3      SP*   |  |                     |  |                                      |                 |         |

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Boring Designation CP02-DL67E-TP-0010

| DRILLING LOG (Cont. Sheet)                      |       |        | INSTALLATION<br>Jacksonville District                                     |           |                     | SHEET 3<br>OF 2 SHEETS |         |                 |         |
|---|-------|--------|---|-----------|---------------------|------------------------|---------|-----------------|---------|
| PROJECT<br>US DOI Modified Waters to ENP        |       |        | COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. FL.)                    |           | HORIZONTAL<br>NAD83 | VERTICAL<br>NGVD29     |         |                 |         |
| LOCATION COORDINATES<br>X = 763,742 Y = 513,043 |       |        | ELEVATION TOP OF BORING<br>13.0 Ft.                                       |           |                     |                        |         |                 |         |
| ELEV.   | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS   | %<br>REC. | BOX<br>OR<br>SAMPLE | ROD<br>OR<br>UD        | REMARKS | BLOWS/<br>1 FT. | N-VALUE |
|   |       |        | *Lab visual classification based on gradation curve. No Atterberg limits. |           |                     |                        |         |                 |         |



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| DRILLING LOG  |       | DIVISION<br>South Atlantic                      |  | INSTALLATION<br>Jacksonville District                          |                              | SHEET 1<br>OF 2 SHEETS   |          |                 |         |
|---|-------|---|--|--|------------------------------|--|----------|-----------------|---------|
| 1. PROJECT<br>US DOI Modified Waters to ENP<br>L-67 Extension   |       |   |  | 9. SIZE AND TYPE OF BIT See Remarks                            |                              |  |          |                 |         |
| 2. BORING DESIGNATION<br>CP02-DL67E-TP-0011   |       | LOCATION COORDINATES<br>X = 763,955 Y = 507,074 |  | 10. COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. Ft.)     |                              | HORIZONTAL<br>NAD83<br>VERTICAL<br>NGVD29                                      |          |                 |         |
| 3. DRILLING AGENCY<br>Corps of Engineers - CESAJ  |       | CONTRACTOR FILE NO.                             |  | 11. MANUFACTURER'S DESIGNATION OF DRILL<br>Backhoe             |                              | <input type="checkbox"/> AUTO HAMMER<br><input type="checkbox"/> MANUAL HAMMER |          |                 |         |
| 4. NAME OF DRILLER<br>H & H Land  |       |   |  | 12. TOTAL SAMPLES<br>2   |                              | DISTURBED<br>0<br>UNDISTURBED (UD)   |          |                 |         |
| 5. DIRECTION OF BORING<br><input checked="" type="checkbox"/> VERTICAL<br><input type="checkbox"/> INCLINED |       | DEG. FROM<br>VERTICAL                           |  | 13. TOTAL NUMBER CORE BOXES<br>0                               |                              |  |          |                 |         |
| 6. THICKNESS OF OVERBURDEN<br>N/A   |       |   |  | 14. ELEVATION GROUND WATER<br>3.1 Ft.                          |                              |  |          |                 |         |
| 7. DEPTH DRILLED INTO ROCK<br>N/A   |       |   |  | 15. DATE BORING<br>06-11-02                                    |                              | STARTED<br>06-11-02<br>COMPLETED<br>06-11-02                                   |          |                 |         |
| 8. TOTAL DEPTH OF BORING<br>10.0 Ft.  |       |   |  | 16. ELEVATION TOP OF BORING<br>12.3 Ft.                        |                              |  |          |                 |         |
|   |       |   |  | 17. TOTAL RECOVERY FOR BORING<br>N/A                           |                              |  |          |                 |         |
|   |       |   |  | 18. SIGNATURE AND TITLE OF INSPECTOR<br>Steve Myers, Geologist |                              |  |          |                 |         |
| ELEV.   | DEPTH | LEGEND  | CLASSIFICATION OF MATERIALS  | %<br>REC.  | NO.<br>OF<br>SAMPLE<br>BOXES | ROD<br>OR<br>UD  | REMARKS  | BLOWS/<br>1 FT. | N-VALUE |
| 12.3  | 0.0   |   | FILL, sandy, mostly rounded fine-grained sand-sized quartz, little subangular to rounded carbonate, little silt, few fine to coarse gravel-sized limestone, few cobble-sized limestone, strong reaction with HCl, moist, tan |  |                              |  | 12.3     |                 |         |
|   |       |   |  |  | 1                            |  | Test Pit |                 |         |
| 4.6   | 7.8   |   | PEAT, few clay, black (PT)   |  |                              |  | 4.6      |                 |         |
| 4.3   | 8.0   |   | SAND, clayey, medium plasticity, soft, some rounded fine-grained sand-sized quartz, some clay, little silt, wet, gray (SC)   |  | 2                            |  | 4.3      |                 |         |
|   |       |   |  |  |                              |  | Test Pit |                 |         |
| 2.5   | 9.8   |   | LIMESTONE, hard, slightly weathered, aphanitic, vuggy, brown   |  |                              |  | 2.5      |                 |         |
| 2.3   | 10.0  |   |  |  |                              |  | 2.3      |                 |         |
| NOTES:  |       |   |  |  |                              |  |          |                 |         |
| 1. USACE Jacksonville is the custodian for these original files.  |       |   |  |  |                              |  |          |                 |         |
| 2. Soils are field visually classified in accordance with the Unified Soils Classification System.          |       |   |  |  |                              |  |          |                 |         |
| 3. Laboratory Testing Results   |       |   |  |  |                              |  |          |                 |         |
| SAMPLE ID   |       |   | SAMPLE DEPTH   |  | LABORATORY CLASSIFICATION    |  |          |                 |         |

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| DRILLING LOG (Cont. Sheet)                      |       |        | INSTALLATION<br>Jacksonville District                                     |           |                     | SHEET 3<br>OF 2 SHEETS |         |                 |         |
|---|-------|--------|---|-----------|---------------------|------------------------|---------|-----------------|---------|
| PROJECT<br>US DOI Modified Waters to ENP        |       |        | COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. FL.)                    |           | HORIZONTAL<br>NAD83 | VERTICAL<br>NGVD29     |         |                 |         |
| LOCATION COORDINATES<br>X = 763.955 Y = 507.074 |       |        | ELEVATION TOP OF BORING<br>12.3 Ft.                                       |           |                     |                        |         |                 |         |
| ELEV.   | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS   | %<br>REC. | BOX<br>OR<br>SAMPLE | ROD<br>OR<br>UD        | REMARKS | BLOWS/<br>1 FT. | N-VALUE |
|   |       |        | 1 0.0/7.8 SP*   |           |                     |                        |         |                 |         |
|   |       |        | *Lab visual classification based on gradation curve. No Atterberg limits. |           |                     |                        |         |                 |         |

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| DRILLING LOG  |       | DIVISION<br>South Atlantic                      |  | INSTALLATION<br>Jacksonville District                          |                           | SHEET 1<br>OF 2 SHEETS   |          |                 |         |
|---|-------|---|--|--|---------------------------|--|----------|-----------------|---------|
| 1. PROJECT<br>US DOI Modified Waters to ENP<br>L-67 Extension   |       |   |  | 9. SIZE AND TYPE OF BIT See Remarks                            |                           |  |          |                 |         |
| 2. BORING DESIGNATION<br>CP02-DL67E-TP-0012   |       | LOCATION COORDINATES<br>X = 764,168 Y = 501,106 |  | 10. COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. Ft.)     |                           | HORIZONTAL<br>NAD83<br>VERTICAL<br>NGVD29                                      |          |                 |         |
| 3. DRILLING AGENCY<br>Corps of Engineers - CESAJ  |       | CONTRACTOR FILE NO.                             |  | 11. MANUFACTURER'S DESIGNATION OF DRILL<br>Backhoe             |                           | <input type="checkbox"/> AUTO HAMMER<br><input type="checkbox"/> MANUAL HAMMER |          |                 |         |
| 4. NAME OF DRILLER<br>H & H Land  |       |   |  | 12. TOTAL SAMPLES<br>1   |                           | DISTURBED<br>0<br>UNDISTURBED (UD)   |          |                 |         |
| 5. DIRECTION OF BORING<br><input checked="" type="checkbox"/> VERTICAL<br><input type="checkbox"/> INCLINED |       | DEG. FROM<br>VERTICAL                           |  | 13. TOTAL NUMBER CORE BOXES<br>0                               |                           | 14. ELEVATION GROUND WATER<br>3.6 Ft.  |          |                 |         |
| 6. THICKNESS OF OVERBURDEN<br>N/A   |       | 15. DATE BORING<br>06-11-02                     |  | 16. ELEVATION TOP OF BORING<br>12.3 Ft.                        |                           | STARTED<br>06-11-02<br>COMPLETED<br>06-11-02                                   |          |                 |         |
| 7. DEPTH DRILLED INTO ROCK<br>N/A   |       | 17. TOTAL RECOVERY FOR BORING<br>N/A            |  | 18. SIGNATURE AND TITLE OF INSPECTOR<br>Steve Myers, Geologist |                           |  |          |                 |         |
| 8. TOTAL DEPTH OF BORING<br>10.0 Ft.  |       |   |  |  |                           |  |          |                 |         |
| ELEV.   | DEPTH | LEGEND  | CLASSIFICATION OF MATERIALS  | %<br>REC.  | BOX<br>OR<br>SAMPLE       | ROD<br>OR<br>UD  | REMARKS  | BLOWS/<br>1 FT. | N-VALUE |
| 12.3  | 0.0   |   | FILL, sandy, mostly rounded fine-grained sand-sized quartz, little subangular to rounded fine to coarse-grained sand-sized carbonate, few gravel to cobble-sized limestone, strong reaction with HCl, moist, tan |  |                           |  | 12.3     |                 |         |
|   |       |   |  |  | 1                         |  | Test Pit |                 |         |
| 2.8   | 9.5   |   | At El. 3.8 Ft., few silt, wet, gray  |  |                           |  | 2.8      |                 |         |
| 2.3   | 10.0  |   | LIMESTONE, hard, slightly weathered, aphanitic, solid, yellowish   |  |                           |  | 2.3      |                 |         |
| NOTES:  |       |   |  |  |                           |  |          |                 |         |
| 1. USACE Jacksonville is the custodian for these original files.  |       |   |  |  |                           |  |          |                 |         |
| 2. Soils are field visually classified in accordance with the Unified Soils Classification System.          |       |   |  |  |                           |  |          |                 |         |
| 3. Laboratory Testing Results   |       |   |  |  |                           |  |          |                 |         |
| SAMPLE ID   |       |   | SAMPLE DEPTH   |  | LABORATORY CLASSIFICATION |  |          |                 |         |
| 1   |       |   | 0.0/9.5  |  | SP*                       |  |          |                 |         |

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Boring Designation CP02-DL67E-TP-0012

| DRILLING LOG (Cont. Sheet)                      |       |        | INSTALLATION<br>Jacksonville District                                     |           |                     | SHEET 3<br>OF 2 SHEETS |         |                 |         |
|---|-------|--------|---|-----------|---------------------|------------------------|---------|-----------------|---------|
| PROJECT<br>US DOI Modified Waters to ENP        |       |        | COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. FL.)                    |           | HORIZONTAL<br>NAD83 | VERTICAL<br>NGVD29     |         |                 |         |
| LOCATION COORDINATES<br>X = 764,168 Y = 501,106 |       |        | ELEVATION TOP OF BORING<br>12.3 Ft.                                       |           |                     |                        |         |                 |         |
| ELEV.   | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS   | %<br>REC. | BOX<br>OR<br>SAMPLE | ROD<br>OR<br>UD        | REMARKS | BLOWS/<br>1 FT. | N-VALUE |
|   |       |        | *Lab visual classification based on gradation curve. No Atterberg limits. |           |                     |                        |         |                 |         |

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| DRILLING LOG  |       | DIVISION<br>South Atlantic                      |   | INSTALLATION<br>Jacksonville District                          |                     | SHEET 1<br>OF 2 SHEETS   |         |                 |         |
|---|-------|---|---|--|---------------------|--|---------|-----------------|---------|
| 1. PROJECT<br>US DOI Modified Waters to ENP<br>L-67 Extension   |       |   |   | 9. SIZE AND TYPE OF BIT See Remarks                            |                     |  |         |                 |         |
| 2. BORING DESIGNATION<br>CP02-DL67E-TP-0013   |       | LOCATION COORDINATES<br>X = 764,371 Y = 495,427 |   | 10. COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. Ft.)     |                     | HORIZONTAL<br>NAD83<br>VERTICAL<br>NGVD29                                      |         |                 |         |
| 3. DRILLING AGENCY<br>Corps of Engineers - CESAJ  |       | CONTRACTOR FILE NO.                             |   | 11. MANUFACTURER'S DESIGNATION OF DRILL<br>Backhoe             |                     | <input type="checkbox"/> AUTO HAMMER<br><input type="checkbox"/> MANUAL HAMMER |         |                 |         |
| 4. NAME OF DRILLER<br>H & H Land  |       |   |   | 12. TOTAL SAMPLES<br>2   |                     | DISTURBED<br>0<br>UNDISTURBED (UD)   |         |                 |         |
| 5. DIRECTION OF BORING<br><input checked="" type="checkbox"/> VERTICAL<br><input type="checkbox"/> INCLINED |       | DEG. FROM<br>VERTICAL                           |   | 13. TOTAL NUMBER CORE BOXES<br>0                               |                     | 14. ELEVATION GROUND WATER<br>1.7 Ft.  |         |                 |         |
| 6. THICKNESS OF OVERBURDEN<br>N/A   |       | 15. DATE BORING<br>06-11-02                     |   | 16. ELEVATION TOP OF BORING<br>11.4 Ft.                        |                     | STARTED<br>06-11-02<br>COMPLETED<br>06-11-02                                   |         |                 |         |
| 7. DEPTH DRILLED INTO ROCK<br>N/A   |       | 17. TOTAL RECOVERY FOR BORING<br>N/A            |   | 18. SIGNATURE AND TITLE OF INSPECTOR<br>Steve Myers, Geologist |                     |  |         |                 |         |
| 8. TOTAL DEPTH OF BORING<br>10.0 Ft.  |       |   |   |  |                     |  |         |                 |         |
| ELEV.   | DEPTH | LEGEND  | CLASSIFICATION OF MATERIALS   | %<br>REC.  | BOX<br>OR<br>SAMPLE | ROD<br>OR<br>UD  | REMARKS | BLOWS/<br>1 FT. | N-VALUE |
| 11.4  | 0.0   |   | FILL, sandy, mostly rounded fine-grained sand-sized quartz, some subrounded to rounded fine-grained sand-sized carbonate, little coarse gravel-sized limestone, few cobble-sized limestone, moist, light gray     |  |                     |  | 11.4    |                 |         |
| 5.4   | 6.0   |   | PEAT, moist, fibrous, black (PT)  |  |                     |  | 5.4     |                 |         |
| 1.4   | 10.0  |   | At El. 1.7 Ft., wet<br>BORING TERMINATED IN REFUSAL   |  |                     |  | 1.4     |                 |         |
|   |       |   | NOTES:<br>1. USACE Jacksonville is the custodian for these original files.<br>2. Soils are field visually classified in accordance with the Unified Soils Classification System.<br>3. Laboratory Testing Results |  |                     |  |         |                 |         |
|   |       |   | SAMPLE ID      SAMPLE DEPTH      LABORATORY CLASSIFICATION  |  |                     |  |         |                 |         |



Boring Designation CP02-DL67E-TP-0013

| DRILLING LOG (Cont. Sheet)                      |       |        |   | INSTALLATION<br>Jacksonville District                  |                     | SHEET 2<br>OF 2 SHEETS |                    |                 |         |
|---|-------|--------|---|--|---------------------|------------------------|--------------------|-----------------|---------|
| PROJECT<br>US DOI Modified Waters to ENP        |       |        |   | COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. Ft.) |                     | HORIZONTAL<br>NAD83    | VERTICAL<br>NGVD29 |                 |         |
| LOCATION COORDINATES<br>X = 764,371 Y = 495,427 |       |        |   | ELEVATION TOP OF BORING<br>11.4 Ft.                    |                     |                        |                    |                 |         |
| ELEV.   | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS   | %<br>REC.  | BOX<br>OR<br>SAMPLE | ROD<br>OR<br>UD        | REMARKS            | BLOWS/<br>1 FT. | N-VALUE |
|   |       |        | 1 0.0/6.0 GP*   |  |                     |                        |                    |                 |         |
|   |       |        | *Lab visual classification based on gradation curve. No Alterberg limits. |  |                     |                        |                    |                 |         |

| DRILLING LOG  |       | DIVISION<br>South Atlantic                      |   | INSTALLATION<br>Jacksonville District                          |              | SHEET 1<br>OF 2 SHEETS   |          |                 |         |
|---|-------|---|---|--|--------------|--|----------|-----------------|---------|
| 1. PROJECT<br>US DOI Modified Waters to ENP<br>L-67 Extension   |       |   |   | 9. SIZE AND TYPE OF BIT See Remarks                            |              |  |          |                 |         |
| 2. BORING DESIGNATION<br>CP02-DL67E-TP-0014   |       | LOCATION COORDINATES<br>X = 764,470 Y = 492,583 |   | 10. COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. Ft.)     |              | HORIZONTAL<br>NAD83<br>VERTICAL<br>NGVD29                                      |          |                 |         |
| 3. DRILLING AGENCY<br>Corps of Engineers - CESA/J   |       | CONTRACTOR FILE NO.                             |   | 11. MANUFACTURER'S DESIGNATION OF DRILL<br>Backhoe             |              | <input type="checkbox"/> AUTO HAMMER<br><input type="checkbox"/> MANUAL HAMMER |          |                 |         |
| 4. NAME OF DRILLER<br>H & H Land  |       |   |   | 12. TOTAL SAMPLES<br>1   |              | DISTURBED<br>0<br>UNDISTURBED (UD)   |          |                 |         |
| 5. DIRECTION OF BORING<br><input checked="" type="checkbox"/> VERTICAL<br><input type="checkbox"/> INCLINED |       | DEG. FROM<br>VERTICAL                           |   | 13. TOTAL NUMBER CORE BOXES<br>0                               |              | 14. ELEVATION GROUND WATER<br>2.6 Ft.  |          |                 |         |
| 6. THICKNESS OF OVERBURDEN<br>N/A   |       |   |   | 15. DATE BORING<br>06-11-02                                    |              | STARTED<br>06-11-02<br>COMPLETED<br>06-11-02                                   |          |                 |         |
| 7. DEPTH DRILLED INTO ROCK<br>N/A   |       |   |   | 16. ELEVATION TOP OF BORING<br>11.4 Ft.                        |              | 17. TOTAL RECOVERY FOR BORING<br>N/A   |          |                 |         |
| 8. TOTAL DEPTH OF BORING<br>9.3 Ft.   |       |   |   | 18. SIGNATURE AND TITLE OF INSPECTOR<br>Steve Myers, Geologist |              |  |          |                 |         |
| ELEV.   | DEPTH | LEGEND  | CLASSIFICATION OF MATERIALS   | %<br>REC.  | OR<br>SAMPLE | ROD<br>OR<br>UD  | REMARKS  | BLOWS/<br>1 FT. | N-VALUE |
| 11.4  | 0.0   |   | FILL, sandy, mostly rounded fine-grained sand-sized quartz, few angular to subrounded fine-grained sand-sized carbonate, few fine gravel-sized limestone, strong reaction with HCl, moist, tan                    |  |              |  | 11.4     |                 |         |
|   |       |   | At El. 5.4 Ft., little cobble-sized limestone   |  |              |  | Test Pit |                 |         |
| 4.2   | 7.3   |   | PEAT, wet, brown/black (PT)   |  |              |  | 4.2      |                 |         |
|   |       |   |   |  |              |  | Test Pit |                 |         |
| 2.2   | 9.3   |   | BORING TERMINATED IN REFUSAL  |  |              |  | 2.2      |                 |         |
|   |       |   | NOTES:<br>1. USACE Jacksonville is the custodian for these original files.<br>2. Soils are field visually classified in accordance with the Unified Soils Classification System.<br>3. Laboratory Testing Results |  |              |  |          |                 |         |
|   |       |   | SAMPLE ID      SAMPLE DEPTH      LABORATORY CLASSIFICATION  |  |              |  |          |                 |         |
|   |       |   | 1      0.0/7.3      SP*   |  |              |  |          |                 |         |
|   |       |   | *Lab visual classification based on gradation   |  |              |  |          |                 |         |

Boring Designation CP02-DL67E-TP-0014

| DRILLING LOG (Cont. Sheet)                      |       |        | INSTALLATION<br>Jacksonville District                  |           |                     | SHEET 3<br>OF 2 SHEETS |         |                 |         |
|---|-------|--------|--|-----------|---------------------|------------------------|---------|-----------------|---------|
| PROJECT<br>US DOI Modified Waters to ENP        |       |        | COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. FL.) |           | HORIZONTAL<br>NAD83 | VERTICAL<br>NGVD29     |         |                 |         |
| LOCATION COORDINATES<br>X = 764,470 Y = 492,583 |       |        | ELEVATION TOP OF BORING<br>11.4 Ft.                    |           |                     |                        |         |                 |         |
| ELEV.   | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS                            | %<br>REC. | BOX<br>OR<br>SAMPLE | ROD<br>OR<br>UD        | REMARKS | BLOWS/<br>1 FT. | N-VALUE |
|   |       |        | curve. No Atterberg limits.                            |           |                     |                        |         |                 |         |

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Figure G-3-2. L-67C Boring Map (U.S. Army Corps of Engineers, 2009)

| DRILLING LOG  |       |        | DIVISION<br>South Atlantic   |           | INSTALLATION<br>Jacksonville District                           |                 | SHEET 1<br>OF 2 SHEETS |                   |         |
|---|-------|--------|--|-----------|---|-----------------|------------------------|-------------------|---------|
| 1. PROJECT<br>C&SF/CERP/WCA 3 Decomp Part 1<br>L-87A Vicinity   |       |        |  |           | 9. SIZE AND TYPE OF BIT See Remarks                             |                 |                        |                   |         |
| 2. BORING DESIGNATION<br>CP09-DCOMP-CB-0001   |       |        |  |           | 10. COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. Ft.)      |                 |                        |                   |         |
| 3. DRILLING AGENCY<br>Corps of Engineers - CESAM  |       |        |  |           | 11. MANUFACTURER'S DESIGNATION OF DRILL<br>Failing 1500         |                 |                        |                   |         |
| 4. NAME OF DRILLER<br>C. Brown  |       |        |  |           | 12. TOTAL SAMPLES<br>12   |                 |                        |                   |         |
| 5. DIRECTION OF BORING<br><input checked="" type="checkbox"/> VERTICAL<br><input type="checkbox"/> INCLINED |       |        |  |           | 13. TOTAL NUMBER CORE BOXES<br>1                                |                 |                        |                   |         |
| 6. THICKNESS OF OVERBURDEN<br>N/A   |       |        |  |           | 14. ELEVATION GROUND WATER<br>9.1 Ft.                           |                 |                        |                   |         |
| 7. DEPTH DRILLED INTO ROCK<br>N/A   |       |        |  |           | 15. DATE BORING<br>07-01-09                                     |                 |                        |                   |         |
| 8. TOTAL DEPTH OF BORING<br>17.6 Ft.  |       |        |  |           | 16. ELEVATION TOP OF BORING<br>16.3 Ft.                         |                 |                        |                   |         |
|   |       |        |  |           | 17. TOTAL RECOVERY FOR BORING<br>56 %                           |                 |                        |                   |         |
|   |       |        |  |           | 18. SIGNATURE AND TITLE OF INSPECTOR<br>Jerrell Hand, Geologist |                 |                        |                   |         |
| ELEV.   | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS  | %<br>REC. | BOX<br>OR<br>SAMPLE   | ROD<br>OR<br>UD | REMARKS                | BLOWS/<br>0.5 FT. | N-VALUE |
| 16.3  | 0.0   |        | FILL, gravelly, few fine to coarse-grained sand-sized carbonate, few silt, trace organic matter, moist, 10YR 6/2 light brownish gray | 67        | 1   |                 | 16.3                   | 6                 | 20      |
|   |       |        |  |           | SPT Sampler   | 12              |                        |                   |         |
|   |       |        |  | 53        | 2   |                 | 14.8                   | 8                 | 13      |
|   |       |        |  |           | SPT Sampler   | 5               |                        |                   |         |
|   |       |        |  | 40        | 3   |                 | 13.5                   | 8                 | 9       |
|   |       |        |  |           | SPT Sampler   | 3               |                        |                   |         |
|   |       | 47     | 4  |           | 11.8  | 6               | 5                      |                   |         |
|   |       |        | SPT Sampler  | 1         |   |                 |                        |                   |         |
|   |       | 47     | 5  |           | 10.3  | 5               | 7                      |                   |         |
|   |       |        | SPT Sampler  | 2         |   |                 |                        |                   |         |
|   |       | 47     | 6  |           | 8.8   | 2               | 3                      |                   |         |
|   |       |        | SPT Sampler  | 1         |   |                 |                        |                   |         |
| 7.3   | 8.0   |        | SILT, organic-L, few peat, slightly fibrous, 10YR 2/1 black (OL)   | 80        | 7   |                 | 7.3                    | 8                 | 13      |
|   |       |        |  |           | SPT Sampler   | 2               |                        |                   |         |
|   |       |        |  | 67        | 8   |                 | 5.8                    | 5                 | 7       |
|   |       |        |  |           | SPT Sampler   | 2               |                        |                   |         |
|   |       |        |  | 40        | 9   |                 | 4.3                    | 8                 | 18      |
|   |       |        |  |           | SPT Sampler   | 1               |                        |                   |         |
|   |       |        |  |           | 3.8   | 1               |                        |                   |         |
|   |       |        | Advanced Boring  |           |   |                 |                        |                   |         |
|   |       | 80     | 10   |           | 2.8   | 2               | 6                      |                   |         |
|   |       |        | SPT Sampler  | 3         |   |                 |                        |                   |         |
|   |       |        |  |           | 1.3   | 3               |                        |                   |         |

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(Continued)

| DRILLING LOG (Cont. Sheet)              |              |  | INSTALLATION<br>Jacksonville District                                 |           | SHEET 3<br>OF 2 SHEETS |                    |                           |         |         |        |   |         |     |  |  |  |  |  |
|---|--------------|--|---|-----------|------------------------|--------------------|---------------------------|---------|---------|--------|---|---------|-----|--|--|--|--|--|
| PROJECT<br>C&SF.CERP.WCA 3 Decom Part 1 |              |  | COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. FL.)                |           | HORIZONTAL<br>NAD83    | VERTICAL<br>NAVD88 |                           |         |         |        |   |         |     |  |  |  |  |  |
| LOCATION COORDINATES<br>X =    Y =      |              |  | ELEVATION TOP OF BORING<br>16.3 Ft.                                   |           |                        |                    |                           |         |         |        |   |         |     |  |  |  |  |  |
| ELEV.                                   | DEPTH        | LEGEND   | CLASSIFICATION OF MATERIALS   | %<br>REC. | ROD<br>OR<br>SAMPLE    | REMARKS            | BLOWS/<br>0.5 FT.         | N-VALUE |         |        |   |         |     |  |  |  |  |  |
| 1.0                                     | 15.3         |   | LIMESTONE, hard, slightly weathered, fine grained; 2.5YR 6/2 pale red | 67        | 11                     | SPT Sampler        | 6                         | 30      |         |        |   |         |     |  |  |  |  |  |
|   |              |  |   |           |                        | -0.2               | 10                        |         |         |        |   |         |     |  |  |  |  |  |
|   |              |  |   |           |                        |                    | 20                        |         |         |        |   |         |     |  |  |  |  |  |
| -1.3                                    | 17.6         |  |   |           | 45                     | 12                 | SPT Sampler               | 9       | 0       |        |   |         |     |  |  |  |  |  |
|   |              | NOTES:<br>1. USACE Jacksonville is the custodian for these original files.<br>2. Soils are field visually classified in accordance with the Unified Soils Classification System.<br>3. Laboratory Testing Results<br><table border="1"> <thead> <tr> <th>SAMPLE ID</th> <th>SAMPLE DEPTH</th> <th>LABORATORY CLASSIFICATION</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>0.0/1.5</td> <td>GP-GM*</td> </tr> <tr> <td>4</td> <td>4.5/6.0</td> <td>GM*</td> </tr> </tbody> </table> *Lab visual classification based on gradation curve. No Atterberg limits.<br>4. Additional Laboratory Testing<br>2 Moisture Content<br>50 Moisture Content<br>6 Moisture Content<br>13 Moisture Content |   |           | SAMPLE ID              | SAMPLE DEPTH       | LABORATORY CLASSIFICATION | 1       | 0.0/1.5 | GP-GM* | 4 | 4.5/6.0 | GM* |  |  | 140# hammer w/30" drop used with 2.0' split spoon (1-3/8" I.D. x 2" O.D.). |  |  |
| SAMPLE ID                               | SAMPLE DEPTH | LABORATORY CLASSIFICATION  |   |           |                        |                    |                           |         |         |        |   |         |     |  |  |  |  |  |
| 1                                       | 0.0/1.5      | GP-GM*   |   |           |                        |                    |                           |         |         |        |   |         |     |  |  |  |  |  |
| 4                                       | 4.5/6.0      | GM*  |   |           |                        |                    |                           |         |         |        |   |         |     |  |  |  |  |  |

| DRILLING LOG  |       | DIVISION<br>South Atlantic      |  | INSTALLATION<br>Jacksonville District                           |               | SHEET 1<br>OF 2 SHEETS  |             |                   |         |   |
|---|-------|---------------------------------|--|---|---------------|---|-------------|-------------------|---------|---|
| 1. PROJECT<br>C&SF/CERP/WCA 3 Decomp Part 1<br>L-87A Vicinity   |       |                                 |  | 9. SIZE AND TYPE OF BIT See Remarks                             |               |   |             |                   |         |   |
| 2. BORING DESIGNATION<br>CP09-DCOMP-CB-0002   |       | LOCATION COORDINATES<br>X = Y = |  | 10. COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. Ft.)      |               | HORIZONTAL<br>NAD83   |             |                   |         |   |
| 3. DRILLING AGENCY<br>Corps of Engineers - CESAM  |       | CONTRACTOR FILE NO.             |  | 11. MANUFACTURER'S DESIGNATION OF DRILL<br>Failing 1500         |               | <input type="checkbox"/> AUTO HAMMER<br><input checked="" type="checkbox"/> MANUAL HAMMER |             |                   |         |   |
| 4. NAME OF DRILLER<br>C. Brown  |       |                                 |  | 12. TOTAL SAMPLES<br>11   |               | UNDISTURBED (UD)<br>0   |             |                   |         |   |
| 5. DIRECTION OF BORING<br><input checked="" type="checkbox"/> VERTICAL<br><input type="checkbox"/> INCLINED |       | DEG. FROM VERTICAL              |  | 13. TOTAL NUMBER CORE BOXES<br>1                                |               | 14. ELEVATION GROUND WATER<br>9.7 Ft.   |             |                   |         |   |
| 6. THICKNESS OF OVERBURDEN<br>N/A   |       | BEARING                         |  | 15. DATE BORING<br>07-01-09                                     |               | STARTED<br>07-01-09   |             |                   |         |   |
| 7. DEPTH DRILLED INTO ROCK<br>N/A   |       |                                 |  | 16. ELEVATION TOP OF BORING<br>16.2 Ft.                         |               | 17. TOTAL RECOVERY FOR BORING<br>51 %   |             |                   |         |   |
| 8. TOTAL DEPTH OF BORING<br>16.4 Ft.  |       |                                 |  | 18. SIGNATURE AND TITLE OF INSPECTOR<br>Jerrell Hand, Geologist |               |   |             |                   |         |   |
| ELEV.   | DEPTH | LEGEND                          | CLASSIFICATION OF MATERIALS  | % REC.  | BOX OR SAMPLE | ROD OR UD   | REMARKS     | BLOWS/<br>0.5 FT. | N-VALUE |   |
| 16.2  | 0.0   |                                 | FILL, gravelly, mostly carbonate, few fine to coarse-grained sand-sized carbonate, few silt, trace organic matter, moist, many hard carbonate cobbles and boulders too large to sample at surface, 10YR 7/1 light gray | 67  | 1             |   | 16.2        | 3                 | 0       |   |
|   |       |                                 |  |   | SPT Sampler   | 8   | 16          |                   |         |   |
|   |       |                                 |  |   | 14.7          | 8   |             |                   |         |   |
|   |       |                                 |  |   | 47            | 2   |             | SPT Sampler       | 7       | 7 |
|   |       |                                 |  |   | 13.2          | 0   |             |                   |         |   |
|   |       |                                 |  | 67  | 3             |   | SPT Sampler | 4                 | 9       |   |
|   |       |                                 |  | 33  | 4             |   | SPT Sampler | 10                | 5       |   |
|   |       |                                 |  |   |               |   | 10.2        | 6                 | 16      |   |
|   |       |                                 |  | 47  | 5             |   | SPT Sampler | 25                |         |   |
| 8.7   | 7.5   |                                 | SILT, organic-L, few peat, wet, slightly fibrous, 10YR 2/1 black (OL)  |   |               |   | 8.7         | 14                | 20      |   |
|   |       |                                 |  |   |               |   | SPT Sampler | 6                 |         |   |
|   |       |                                 |  |   |               |   | 2           |                   |         |   |
|   |       |                                 |  |   |               |   | 7.2         | 4                 | 7       |   |
|   |       |                                 |  |   |               |   | 3           |                   |         |   |
|   |       |                                 |  |   |               |   | 20          | 7                 |         |   |
|   |       |                                 |  |   |               |   | 5.7         | 1                 | 2       |   |
|   |       |                                 |  |   |               |   | 33          | 8                 |         |   |
|   |       |                                 |  |   |               |   | 4.2         | 6                 | 10      |   |
|   |       |                                 |  |   |               |   | 27          | 9                 |         |   |
|   |       |                                 |  |   | 1             |   |             |                   |         |   |
|   |       |                                 |  |   | 2.7           | 1   | 2           |                   |         |   |
|   |       |                                 |  |   | 80            | 10  |             |                   |         |   |
|   |       |                                 |  |   |               |   | 1.2         | 3                 | 4       |   |

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(Continued)



| DRILLING LOG (Cont. Sheet)             |                 |        | INSTALLATION<br>Jacksonville District   |                              | SHEET 3<br>OF 2 SHEETS |                              |   |                   |         |   |         |     |    |    |  |             |   |     |
|--|-----------------|--------|---|------------------------------|------------------------|------------------------------|---|-------------------|---------|---|---------|-----|----|----|--|-------------|---|-----|
| PROJECT<br>C&SF:ERP:WCA 3 Decom Part 1 |                 |        | COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. FL.)  |                              | HORIZONTAL<br>NAD83    | VERTICAL<br>NAVD88           |   |                   |         |   |         |     |    |    |  |             |   |     |
| LOCATION COORDINATES<br>X =    Y =     |                 |        | ELEVATION TOP OF BORING<br>16.2 Ft.   |                              |                        |                              |   |                   |         |   |         |     |    |    |  |             |   |     |
| ELEV.                                  | DEPTH           | LEGEND | CLASSIFICATION OF MATERIALS   | %<br>REC.                    | ROX<br>OR<br>SAMPLE    | ROD<br>OR<br>UP              | REMARKS   | BLOWS/<br>0.5 FT. | N-VALUE |   |         |     |    |    |  |             |   |     |
| 0.3                                    | 15.9            |        | SILT, organic-L, medium plasticity, mostly<br>silt, trace peat (OL)<br><br>LIMESTONE, hard, slightly weathered, fine<br>grained, 2.5YR 6/2 pale red<br><br>NOTES:<br>1. USACE Jacksonville is the custodian for<br>these original files.<br><br>2. Soils are field visually classified in<br>accordance with the Unified Soils<br>Classification System.<br><br>3. Laboratory Testing Results<br><table border="1"> <thead> <tr> <th>SAMPLE<br/>ID</th> <th>SAMPLE<br/>DEPTH</th> <th>LABORATORY<br/>CLASSIFICATION</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>0.0/1.5</td> <td>SM*</td> </tr> <tr> <td>3</td> <td>3.0/4.5</td> <td>GM*</td> </tr> </tbody> </table> *Lab visual classification based on gradation<br>curve. No Atterberg limits.<br><br>4. Additional Laboratory Testing<br>4 Moisture Content<br>6 Percent Organic<br>9 Moisture Content | SAMPLE<br>ID                 | SAMPLE<br>DEPTH        | LABORATORY<br>CLASSIFICATION | 1   | 0.0/1.5           | SM*     | 3 | 3.0/4.5 | GM* | 86 | 11 |  | SPT Sampler | 1 | 51+ |
| SAMPLE<br>ID                           | SAMPLE<br>DEPTH |        |   | LABORATORY<br>CLASSIFICATION |                        |                              |   |                   |         |   |         |     |    |    |  |             |   |     |
| 1                                      | 0.0/1.5         |        |   | SM*                          |                        |                              |   |                   |         |   |         |     |    |    |  |             |   |     |
| 3                                      | 3.0/4.5         | GM*    |   |                              |                        |                              |   |                   |         |   |         |     |    |    |  |             |   |     |
| 0.0                                    | 16.2            |        |   |                              |                        |                              | 1   |                   |         |   |         |     |    |    |  |             |   |     |
| -0.2                                   | 16.4            |        |   |                              |                        | -0.2                         | 50/0.4'   |                   |         |   |         |     |    |    |  |             |   |     |
|  |                 |        |   |                              |                        |                              | 140# hammer w/30" drop used with<br>2.0' split spoon (1-3/8" I.D. x 2" O.D.). |                   |         |   |         |     |    |    |  |             |   |     |

| DRILLING LOG  |       | DIVISION<br>South Atlantic      |  | INSTALLATION<br>Jacksonville District                           |                       | SHEET 1<br>OF 2 SHEETS  |   |                |         |
|---|-------|---------------------------------|--|---|-----------------------|---|---|----------------|---------|
| 1. PROJECT<br>C&SF/CERP/WCA 3 Decomp Part 1<br>L-67A Vicinity   |       |                                 |  | 9. SIZE AND TYPE OF BIT See Remarks                             |                       |   |   |                |         |
| 2. BORING DESIGNATION<br>CP09-DCOMP-CB-0003   |       | LOCATION COORDINATES<br>X = Y = |  | 10. COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. Ft.)      |                       | HORIZONTAL<br>NAD83   |   |                |         |
| 3. DRILLING AGENCY<br>Corps of Engineers - CESAM  |       | CONTRACTOR FILE NO.             |  | 11. MANUFACTURER'S DESIGNATION OF DRILL<br>Failing 1500         |                       | <input type="checkbox"/> AUTO HAMMER<br><input checked="" type="checkbox"/> MANUAL HAMMER |   |                |         |
| 4. NAME OF DRILLER<br>C. Brown  |       |                                 |  | 12. TOTAL SAMPLES<br>4  |                       | DISTURBED<br>0  |   |                |         |
| 5. DIRECTION OF BORING<br><input checked="" type="checkbox"/> VERTICAL<br><input type="checkbox"/> INCLINED |       | DEG. FROM VERTICAL              |  | 13. TOTAL NUMBER CORE BOXES<br>1                                |                       | UNDISTURBED (UD)  |   |                |         |
| 6. THICKNESS OF OVERBURDEN<br>N/A   |       |                                 |  | 14. ELEVATION GROUND WATER<br>6.9 Ft.                           |                       |   |   |                |         |
| 7. DEPTH DRILLED INTO ROCK<br>N/A   |       |                                 |  | 15. DATE BORING<br>07-02-09                                     |                       | STARTED<br>07-02-09   |   |                |         |
| 8. TOTAL DEPTH OF BORING<br>15.3 Ft.  |       |                                 |  | 16. ELEVATION TOP OF BORING<br>6.9 Ft.                          |                       |   |   |                |         |
|   |       |                                 |  | 17. TOTAL RECOVERY FOR BORING<br>58 %                           |                       |   |   |                |         |
|   |       |                                 |  | 18. SIGNATURE AND TITLE OF INSPECTOR<br>Jerrell Hand, Geologist |                       |   |   |                |         |
| ELEV.   | DEPTH | LEGEND                          | CLASSIFICATION OF MATERIALS  | % REG.  | Q <sub>u</sub> or SPT | ROD OR UD   | REMARKS   | BLOWS/ 0.5 FT. | N-VALUE |
| 6.9   | 0.0   |                                 | SILT, organic-L, trace organic matter, wet, 10YR 2/1 black (OL)                                      | 0   |                       |   | 6.9   | 3              | 0       |
|   |       |                                 |  |   |                       |   | SPT Sampler   | 3              |         |
|   |       |                                 |  |   |                       |   | 5.4   | 2              | 5       |
|   |       |                                 |  | 7   | 1                     |   | SPT Sampler   | 1              | 2       |
|   |       |                                 |  |   |                       |   | 3.9   | 1              |         |
|   |       |                                 |  | NR  |                       |   | SPT Sampler   | 0              | 1       |
|   |       |                                 |  |   |                       |   | 2.4   | 1              |         |
|   |       |                                 |  | 27  | 2                     |   | SPT Sampler   | 1              | 5       |
|   |       |                                 |  |   |                       |   | 0.9   | 1              | 2       |
| 0.9   | 6.0   |                                 | LIMESTONE, hard, weathered, fine grained, pockets of organic and carbonate silt, 10YR 7/2 light gray | 60  | 3                     |   | SPT Sampler   | 23             | 36      |
|   |       |                                 |  |   |                       |   | -0.6  | 13             |         |
|   |       |                                 | At El. -1.1 Ft., hard, fine grained, porous, few solution channels, 2.5YR 8/1 white                  | 50  | 4                     |   | SPT Sampler   | 9              |         |
|   |       |                                 |  |   |                       |   | -1.2  | 50/0.1         |         |
|   |       |                                 |  | 103   |                       | ROD 67  | 4 x 5-1/2" Diamond Set Bit<br>DT = 39 mins<br>HP = 300 psi<br>DFR = 100 % |                | 10      |
|   |       |                                 |  |   |                       | BOX 1   | -5.1  |                |         |
|   |       |                                 |  | 94  |                       | ROD 52  | 4 x 5-1/2" Diamond Set Bit<br>DT = 23 mins<br>HP = 300 psi<br>DFR = 100 % |                | 15      |

SAJ FORM 1836  
JUN 02

(Continued)

| DRILLING LOG (Cont. Sheet)               |       |        | INSTALLATION<br>Jacksonville District  |           | SHEET 3<br>OF 2 SHEETS |                    |  |                   |         |
|--|-------|--------|--|-----------|------------------------|--------------------|--|-------------------|---------|
| PROJECT<br>C&SF.CERP.WCA 3 Decomp Part 1 |       |        | COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. FL.)   |           | HORIZONTAL<br>NAD83    | VERTICAL<br>NAVD88 |  |                   |         |
| LOCATION COORDINATES<br>X =    Y =       |       |        | ELEVATION TOP OF BORING<br>6.9 Ft.   |           |                        |                    |  |                   |         |
| ELEV.                                    | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS  | %<br>REC. | ROCK<br>OR<br>SAMPLE   | ROD<br>COR<br>UD   | REMARKS  | BLOWS/<br>0.8 FT. | N-VALUE |
| -8.4                                     | 15.3  | Y      | NOTES:<br>1. USACE Jacksonville is the custodian for these original files.<br>2. Soils are field visually classified in accordance with the Unified Soils Classification System.<br>3. At .5 Ft. above water level, water was flowing from NW side of levee through gravel | 94        |                        |                    | 140# hammer w/30" drop used with 2.0' split spoon (1-3/8" I.D. x 2" O.D.)<br><br>Abbreviations:<br>NR = Not Recorded.<br>DT = Drill Time.<br>HP = Hydraulic Pressure.<br>DFR = Drill Fluid Return. |                   |         |

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JUN 02

| DRILLING LOG  |       | DIVISION<br>South Atlantic      |   | INSTALLATION<br>Jacksonville District                           |              | SHEET 1<br>OF 2 SHEETS  |  |              |         |
|---|-------|---------------------------------|---|---|--------------|---|--|--------------|---------|
| 1. PROJECT<br>C&SF: CERP/WCA 3 Decom Part 1<br>L-67A Vicinity   |       |                                 |   | 9. SIZE AND TYPE OF BIT See Remarks                             |              |   |  |              |         |
| 2. BORING DESIGNATION<br>CP09-DCOMP-CB-0004   |       | LOCATION COORDINATES<br>X = Y = |   | 10. COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. Ft.)      |              | HORIZONTAL<br>NAD83<br>VERTICAL<br>NAVD88   |  |              |         |
| 3. DRILLING AGENCY<br>Corps of Engineers - CESAM  |       | CONTRACTOR FILE NO.             |   | 11. MANUFACTURER'S DESIGNATION OF DRILL<br>Failing 1500         |              | <input type="checkbox"/> AUTO HAMMER<br><input checked="" type="checkbox"/> MANUAL HAMMER |  |              |         |
| 4. NAME OF DRILLER<br>C. Brown  |       |                                 |   | 12. TOTAL SAMPLES   |              | DISTURBED<br>5<br>UNDISTURBED (UD)<br>0   |  |              |         |
| 5. DIRECTION OF BORING<br><input checked="" type="checkbox"/> VERTICAL<br><input type="checkbox"/> INCLINED |       | DEG. FROM VERTICAL              |   | 13. TOTAL NUMBER CORE BOXES                                     |              | 1   |  |              |         |
|   |       | BEARING                         |   | 14. ELEVATION GROUND WATER                                      |              |   |  |              |         |
| 6. THICKNESS OF OVERBURDEN<br>N/A   |       |                                 |   | 15. DATE BORING   |              | STARTED<br>06-30-09<br>COMPLETED<br>06-30-09  |  |              |         |
| 7. DEPTH DRILLED INTO ROCK<br>N/A   |       |                                 |   | 16. ELEVATION TOP OF BORING                                     |              | 6.9 Ft.   |  |              |         |
| 8. TOTAL DEPTH OF BORING<br>15.0 Ft.  |       |                                 |   | 17. TOTAL RECOVERY FOR BORING                                   |              | 49 %  |  |              |         |
|   |       |                                 |   | 18. SIGNATURE AND TITLE OF INSPECTOR<br>Jerrell Hand, Geologist |              |   |  |              |         |
| ELEV.   | DEPTH | LEGEND                          | CLASSIFICATION OF MATERIALS   | % REC.  | BORER SAMPLE | RQD OR UD   | REMARKS  | BLOWS/50 FT. | N-VALUE |
| 6.9   | 0.0   |                                 | SILT, organic-L, few peat, wet, 2.5YR 2.5/1 reddish black (OL)  | 33  | 1            |   | 6.9  | 3            |         |
|   |       |                                 |   |   |              |   | SPT Sampler  | 6            |         |
|   |       |                                 |   | 0   |              |   | 5.4  | 2            |         |
|   |       |                                 |   |   |              |   |  | 4            |         |
|   |       |                                 |   |   |              |   | SPT Sampler  | 3            |         |
|   |       |                                 |   |   |              |   | 3.9  | 1            |         |
|   |       |                                 |   | 67  | 2            |   |  | 1            |         |
| 2.9   | 4.0   |                                 | LIMESTONE, hard, slightly weathered, very fine grained, 7.5YR 7/1 light gray  |   | 3            |   |  | 0            |         |
|   |       |                                 |   |   |              |   | 2.4  | 4            |         |
|   |       |                                 |   | 40  | 4            |   |  | 3            |         |
|   |       |                                 |   |   |              |   | SPT Sampler  | 6            |         |
|   |       |                                 |   |   |              |   | 0.9  | 10           |         |
|   |       |                                 |   | 53  | 5            |   |  | 5            |         |
|   |       |                                 |   |   |              |   | SPT Sampler  | 10           |         |
| -0.6  | 7.5   |                                 | SILTSTONE, silicious, hard, cavity, CAPROCK, slightly porous, carbonate trace calcite XLS, trace limonite, solution channels to 1.5", 2.5YR 8/1 white | 80  |              | RQD 32  | 6" Diamond Set Bit<br>DT = 18 mins<br>HP = 300 psi<br>DFR = 0 %  | 50           |         |
|   |       |                                 |   |   |              |   | -3.1   |              |         |
| -2.3  | 9.2   |                                 | LIMESTONE, moderately hard, weathered, fine grained, porous, solution channels, 5YR 7/1 light gray  |   |              | BOX 1   |  |              |         |
|   |       |                                 |   |   |              |   | 6" Diamond Set Bit<br>DT = 25 mins<br>HP = 300 psi<br>DFR = 90 % |              |         |
|   |       |                                 |   | 50  |              | RQD 0   |  |              |         |
|   |       |                                 | From El -5.6 to -8.1 Ft., fine grained, cavity, partially filled vertical 1.5 in. solution channel, 10YR 8/1 white                                    |   |              |   |  |              |         |
| -8.1  | 15.0  |                                 |   |   |              |   | -8.1   |              |         |

SAJ FORM 1836  
JUN 02

(Continued)

| DRILLING LOG (Cont. Sheet)              |       |        | INSTALLATION<br>Jacksonville District  |           |                     | SHEET 3<br>OF 2 SHEETS |   |                   |         |
|---|-------|--------|--|-----------|---------------------|------------------------|---|-------------------|---------|
| PROJECT<br>C&SF:CEP:WCA 3 Decomp Part 1 |       |        | COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. FL.)   |           | HORIZONTAL<br>NAD83 | VERTICAL<br>NAVD88     |   |                   |         |
| LOCATION COORDINATES<br>X =    Y =      |       |        | ELEVATION TOP OF BORING<br>6.9 Ft.   |           |                     |                        |   |                   |         |
| ELEV.                                   | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS  | %<br>REC. | BOX<br>OR<br>SAMPLE | ROD<br>COR<br>UD       | REMARKS   | BLOWS/<br>0.5 FT. | N-VALUE |
|   |       |        | NOTES:<br>1. USACE Jacksonville is the custodian for these original files.<br>2. Soils are field visually classified in accordance with the Unified Soils Classification System. |           |                     |                        | 140# hammer w/30" drop used with 2.0' split spoon (1-3/8" I.D. x 2" O.D.).<br><br>Abbreviations:<br>DT = Drill Time,<br>HP = Hydraulic Pressure,<br>DFR = Drill Fluid Return. |                   |         |

**REPORT OF  
GEOTECHNICAL EXPLORATION**

**L30SMPP Additional Drilling  
TO#70  
Miami, Florida  
Contract W912EP-05-D-0009  
WOLF/WPC Project No. WPC6208.00036**

*- Prepared For -*

**U.S. Army Corp of Engineers  
Mr. Webster Shipley  
701 San Marco Blvd, 3 East  
Jacksonville, FL 32207**

*- Prepared By -*

**WOLF/WPC  
3047-4 St. Johns Bluff Road South  
Jacksonville, Florida 32246**



December 11, 2008

Mr. Webster Shipley  
U.S. Army Corps of Engineers  
701 San Marco Boulevard, 3 East  
Jacksonville, Florida 32207

**Final Conceptual Geotechnical Data Report**  
**L30SMPP Additional Drilling**  
**Contract W912EP-05-D-0009**  
**Miami-Dade County, Florida**  
**WOLF/WPC Project No. WPC6208.00036**

Dear Mr. Shipley:

WOLF/WPC has performed the additional field and laboratory geotechnical services for the L30 Seepage Management Pilot Project (SMPP). This conceptual report presents our understanding of the project, outlines our exploratory procedures, and presents the field and laboratory data obtained for the project.

We have enjoyed assisting you on this project and look forward to serving as your geotechnical consultant on the remainder of this project and on future projects. If you have any questions concerning this report, please contact us.

Respectfully Submitted,  
WOLF/WPC

Jason R. McKinnon, P.E.  
Project Engineer  
Registered, Florida No. 58696

Thomas J. Casey, P.E.  
Senior Geotechnical Engineer  
Registered, Florida No. 62245

Distribution: U.S. Army Corps of Engineers (3)  
File (1)



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**APPENDICES**

**APPENDIX A**

Site Location Map  
Field Exploration Plan

**APPENDIX B**

Drilling Logs for SPT Borings  
Photographs

**APPENDIX C**

Summary of Laboratory Testing Results



## SECTION 1.0 – INVESTIGATION SCOPE

The scope of services for this investigation was provided in the statement of work (SOW) dated February 6, 2008, and was performed under the existing contract W912EP-05-D-0009. The requested field scope of services for this investigation included performing three (3) Standard Penetration Test (SPT) borings with rock coring. The laboratory testing scope of services included performing miscellaneous classification and index property tests, including unconfined compressive strength, visual shell content, and specific gravity determinations.

The project site is shown on the Site Location Map and Field Exploration Plan in Appendix A of this report. The depth of the SPT borings was 90 feet below the existing ground surface, or approximate elevation EL. -76.0. Laboratory classification and index property testing was assigned by Mr. Shipley following review of preliminary field drilling logs.

## SECTION 2.0 – INVESTIGATION PURPOSE

The purpose of the exploratory drilling is to identify subsurface conditions in the right-of-way of the access road adjacent to the Canal L-30 Levee. The project is located west of Miami in Miami-Dade County near the intersection of Krome Avenue and Highway 41.

## SECTION 3.0 – GEOLOGICAL SETTING

The Biscayne Aquifer is composed of Miami Limestone and the Fort Thompson Formation. The Miami Limestone is typically characterized as soft to moderately hard, moderately to highly weathered, thick bedded, highly burrowed in the project area, white to yellow, and contains abundant solution cavities. In the uppermost part of the Miami Limestone, the solution cavities are commonly filled with loose quartz sand and peat. The Fort Thompson Formation lies unconformably beneath the Miami Limestone and is comprised of thick units of soft to hard, moderately weathered, light gray, limestone and sandy limestone that contains marine fossils and calcareous sandstone with a few thin beds of fresh water limestone. In the Project area, the Fort Thompson Formation commonly has zones that contain many vugs and much less commonly can contain cavities up to several feet in diameter.

The Pinecrest Sand Member of the Tamiami Formation creates a semi-confining unit within the Surficial Aquifer System. It lies unconformably beneath the Fort Thompson



Formation and is commonly comprised of quartz sand, limestone, and sandstone that is moderately hard and creamy white to greenish gray with uncommon soft layers of silty, clayey, and shelly sands. A grey limestone, also known as the Ochopee Limestone Member of the Tamiami Formation, lies unconformably below the Pinecrest Sand Member.

## SECTION 4.0 – FIELD EXPLORATION

### 4.1 General

The field exploration conducted for this investigation included performing three (3) SPT borings with rock coring at locations specified by the U.S. Army Corps of Engineers (USACE).

Exploration point coordinates (Latitude and Longitude) were provided by USACE. The exploration points were initially laid out using a Trimble GeoXH handheld GPS device. We also converted the Latitude and Longitudes to State Plane Coordinates using the conversion program CORPSCON. The following table summarizes the exploration locations and depths:

**Table 4.1-Summary of Exploration Point Locations and Depths**

| POINT NAME         | LOCATION COORDINATES |                |              |              | EXPLORATION<br>DEPTH, FEET | DATE<br>PERFORMED |
|--------------------|----------------------|----------------|--------------|--------------|----------------------------|-------------------|
|                    | NORTHING<br>(Y)      | EASTING<br>(X) | LATITUDE     | LONGITUDE    |                            |                   |
| CP07-L30PP-CB-0007 | 523,542              | 825,597        | 25° 46 23.04 | 80° 29 09.68 | 90                         | 5/22/08           |
| CP07-L30PP-CB-0008 | 523,820              | 825,595        | 25° 46 25.79 | 80° 29 06.51 | 90                         | 5/21/08           |
| CP07-L30PP-CB-0009 | 524,095              | 825,886        | 25° 46 28.5  | 80° 29 03.32 | 89                         | 5/15/08           |

### 4.2 SPT Borings

The borings utilized Standard Penetration Test (SPT) split spoon sampling (ASTM D 1586) conducted continuously with 1.5-foot sample intervals in the upper 20 feet. The borings were advanced using mud rotary drilling process using recirculated drilling slurry to stabilize the borehole walls and flush the cuttings. Once the borings reached about 20 feet, the holes were reamed and widened and casing was set in the boreholes to maintain stability within the dike soils. The borings were then advanced thru intact limestone layers using a 5-foot long core barrel. Rock coring continued to depths ranging from 73.5 feet to 75 feet below the existing ground surface, then the split-spoon sampler was re-attached and continuous SPT sampling resumed to the termination depth of the borings. Once the borings were completed, they were airlifted with a compressed air

hose to remove excess sand from the borehole.

At the completion of each boring, geophysical logging was performed by personnel from the United States Geological Survey (USGS) on each borehole. The SPT boring Drilling Logs are presented in Appendix B of this report.

## SECTION 5.0 – LABORATORY TESTING

Following review of the preliminary field logs, Mr. Shipley assigned several laboratory tests on samples obtained from the drilling operation. The laboratory testing conducted for this exploration included the following:

- 3 Visual Percent Shell Content
- 3 Specific Gravity Determinations for Rock (ASTM D 854)
- 3 Unconfined Compressive Strength Tests for Rock (ASTM D 2938-95)

The results of the laboratory testing and index property testing are presented in Appendix C of this report.

## SECTION 6.0 – SUBSURFACE PROFILE

The encountered soils were classified using the Unified Soil Classification System (USCS) in general accordance with ASTM D 2488. The subsurface conditions encountered at the site generally consisted of mixed levee fill materials consisting of sands (SP/SM), clay (CH), silt (ML), and/or limestone gravel (GP) to depths ranging from about 16 feet to 17 feet, at which point a thin layer (1 foot to 1.5 feet thick) of organic peat (PT) was encountered. The borings then generally encountered limestone to depths ranging from about 73.5 feet to 75 feet below ground surface. Below the intact limestone layers, the borings generally encountered sands (SP), silty sands (SM), silts (ML), clay (CH), sand-gravel mixtures (GP), and clay-limestone gravel mixtures (GC) to the termination depth of 89 feet to 90 feet below ground surface. SPT N-values generally ranged from very loose to very dense throughout the subsurface profiles.

The groundwater level was encountered by the SPT borings at depths of approximately 18 feet below the existing ground surface. It should be noted that groundwater levels will fluctuate due to seasonal rainfall fluctuations, distance to relief points or water features, soil drainage characteristics, and construction operations.

## **APPENDICES**

## **APPENDIX A**

- **Site Location Map**
- **Field Exploration Plan**



MAPQUEST



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Biscayne  
MapData © 2008 NAVTEQ or AND

REFERENCE:

[www.mapquest.com](http://www.mapquest.com)

**WOLF  
WPC**

ENGINEERING, ENVIRONMENTAL  
& CONSTRUCTION SERVICES

SITE LOCATION MAP

L30 SMPP  
Miami, Florida

WOLF/WPC Project No.:  
WPC6208.00036

Date:  
8/12/2008

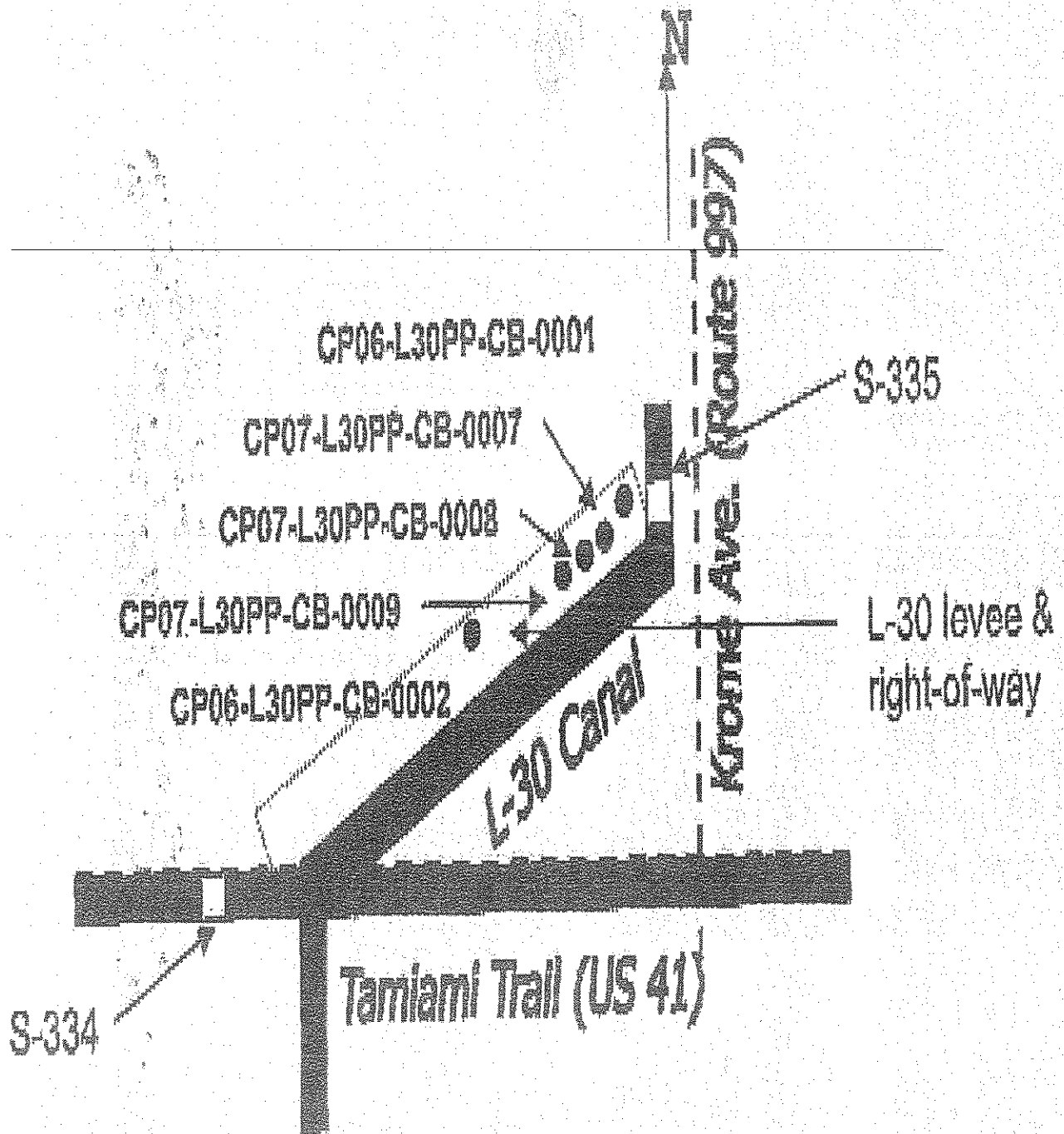


Figure 1: Boring and Well Locations

REFERENCE: ACOE SOW

**WOLF**  
**WPC** ENGINEERING, ENVIRONMENTAL  
& CONSTRUCTION SERVICES

FIELD EXPLORATION PLAN

L30 SMPP  
Miami, Florida

WOLF/WPC Project No.:  
WPC6208.00036

Date:  
8/12/2008

## **APPENDIX B**

- **Drilling Logs for SPT Borings**
- **Photographs**

| DRILLING LOG  |  | DIVISION<br>South Atlantic                      |  | INSTALLATION<br>Jacksonville District                      |  | SHEET 1<br>OF 5 SHEETS  |  |
|---|--|---|--|--|--|---|--|
| 1. PROJECT<br>L-30 Seepage Management Pilot Project   |  |   |  | 9. SIZE AND TYPE OF BIT<br>See Remarks                     |  |   |  |
| 2. BORING DESIGNATION<br>CP07-L30PP-CB-0007   |  | LOCATION COORDINATES<br>X = 825,597 Y = 523,542 |  | 10. COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. Ft.) |  | HORIZONTAL<br>NAD83   |  |
| 3. DRILLING AGENCY<br>Amrill  |  | CONTRACTOR FILE NO.                             |  | 11. MANUFACTURER'S DESIGNATION OF DRILL                    |  | <input type="checkbox"/> AUTO HAMMER<br><input checked="" type="checkbox"/> MANUAL HAMMER |  |
| 4. NAME OF DRILLER<br>Adam Benson   |  |   |  | 12. TOTAL SAMPLES  |  | DISTURBED<br>24   |  |
| 5. DIRECTION OF BORING<br><input checked="" type="checkbox"/> VERTICAL<br><input type="checkbox"/> INCLINED |  |   |  | 13. TOTAL NUMBER CORE BOXES                                |  | 11  |  |
| 6. THICKNESS OF OVERBURDEN<br>N/A   |  |   |  | 14. ELEVATION GROUND WATER                                 |  | -4.0 Ft.  |  |
| 7. DEPTH DRILLED INTO ROCK<br>N/A   |  |   |  | 15. DATE BORING  |  | STARTED<br>05-13-08   |  |
| 8. TOTAL DEPTH OF BORING<br>90.0 Ft.  |  |   |  | 16. ELEVATION TOP OF BORING                                |  | 14.0 Ft.  |  |
|   |  |   |  | 17. TOTAL RECOVERY FOR BORING                              |  | 52 %  |  |
|   |  |   |  | 18. SIGNATURE AND TITLE OF INSPECTOR<br>Mark Holmes.       |  |   |  |

| ELEV. | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS   | % REC. | BOX OR SAMPLE | RQD OR UP | REMARKS     | BLOWS, 0.5 F.T. | N-VALUE |
|-------|-------|--------|---|--------|---------------|-----------|-------------|-----------------|---------|
| 14.0  | 0.0   |        |   |        |               |           | 14.0        |                 |         |
|       |       |        | SAND, poorly-graded, dense to medium dense, mostly fine-grained sand-sized quartz, some sand to gravel-sized limestone, Levee Fill Material, 10YR 7/2 light gray (SP) | 50     | 1             |           | SPT Sampler | 21              | 45      |
|       |       |        |   |        |               |           |             | 30              |         |
|       |       |        |   |        |               |           |             | 15              |         |
|       |       |        |   |        |               |           |             | 12              |         |
|       |       |        |   | 30     | 2             |           | SPT Sampler | 8               | 26      |
|       |       |        |   |        |               |           |             | 8               |         |
|       |       |        |   |        |               |           |             | 18              |         |
|       |       |        |   |        |               |           |             | 9               |         |
|       |       |        |   | 0      | 3             |           | SPT Sampler | 4               |         |
| 9.0   | 5.0   |        |   |        |               |           |             | 4               |         |
|       |       |        | GRAVEL, poorly-graded, medium dense, mostly sand to cobble-sized limestone, few fine-grained sand-sized quartz, few clay, 10YR 8/2 very pale brown (GP)               | 33     | 4             |           | SPT Sampler | 4               | 5       |
|       |       |        |   |        |               |           |             | 8               |         |
|       |       |        |   |        |               |           |             | 12              |         |
|       |       |        |   | 33     | 5             |           | SPT Sampler | 5               | 12      |
|       |       |        |   |        |               |           |             | 7               |         |
|       |       |        |   |        |               |           |             | 5               |         |
|       |       |        |   | 33     | 6             |           | SPT Sampler | 5               | 11      |
|       |       |        |   |        |               |           |             | 6               |         |
|       |       |        |   | 33     | 7             |           | SPT Sampler | 3               | 10      |
|       |       |        | At El. 4.5 Ft., loose, mostly sand to cobble-sized limestone, some clay, few fine-grained sand-sized quartz, 10YR 8/2 very pale brown                                 |        |               |           |             | 5               |         |
|       |       |        |   |        |               |           |             | 10              |         |
| 2.5   | 11.5  |        |   |        |               |           |             | 6               |         |
|       |       |        | GRAVEL, poorly-graded, medium dense, mostly sand to cobble-sized limestone, some clay, few fine-grained sand-sized quartz, 10YR 8/2 very pale brown (GP)              | 33     | 8             |           | SPT Sampler | 9               | 17      |
|       |       |        |   |        |               |           |             | 8               |         |
| 1.0   | 13.0  |        |   |        |               |           |             | 7               |         |
|       |       |        | CLAY, fat, stiff to soft, mostly clay, few shell, 10YR 3/3 dark brown (CH)  | 33     | 9             |           | SPT Sampler | 6               | 9       |
|       |       |        |   |        |               |           |             | 3               |         |
|       |       |        |   | 7      | 10            |           | SPT Sampler | 2               |         |
|       |       |        |   |        |               |           |             | 2               |         |

| DRILLING LOG (Cont. Sheet)                       |       |        |  | INSTALLATION<br>Jacksonville District                  |               | SHEET 2<br>OF 5 SHEETS |                    |               |         |
|--|-------|--------|--|--|---------------|------------------------|--------------------|---------------|---------|
| PROJECT<br>L-30 Seepage Management Pilot Project |       |        |  | COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. Ft.) |               | HORIZONTAL<br>NAD83    | VERTICAL<br>NAVD88 |               |         |
| LOCATION COORDINATES<br>X = 825,597 Y = 523,542  |       |        |  | ELEVATION TOP OF BORING<br>14.0 Ft.                    |               |                        |                    |               |         |
| ELEV.  | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS  | % REC.   | BOX OR SAMPLE | RQD OR UD              | REMARKS            | BLOWS/10 SFT. | N-VALUE |
|  |       |        |  | 7  | 10            |                        | -1.5 SPT Sampler   | 2             | 15      |
| -2.5   | 16.5  |        |  | 13   | 11            |                        | SPT Sampler        | 3             | 5       |
| -3.0   | 17.0  |        | PEAT, soft, some clay, 10YR 3/3 dark brown (PT)  |  |               |                        |                    | 2             |         |
|  |       |        | LIMESTONE, 10YR 8/2 very pale brown  | 50   | 12            |                        | SPT Sampler        | 21            | 32      |
|  |       |        |  | 50   | 13            |                        | SPT Sampler        | 22            | 52      |
| -6.0   | 20.0  |        |  |  |               |                        | -6.0               | 30            | 20      |
|  |       |        | LIMESTONE, fossiliferous, moderately hard, 10YR 8/2 very pale brown                            | 50   | BOX RQD       | 14 12                  |                    |               |         |
|  |       |        |  |  |               |                        | -11.0              |               | 25      |
|  |       |        |  | 85   | BOX RQD       | 15 47                  |                    |               |         |
| -16.0  | 30.0  |        | At El. -14.0 Ft., sparsely fossiliferous, moderately hard, weathered, 10YR 8/2 very pale brown |  |               |                        |                    |               |         |
|  |       |        | LIMESTONE  |  |               |                        | -16.0              |               | 30      |
|  |       |        |  | 75   | BOX RQD       | 16 26                  |                    |               |         |
| -19.5  | 33.5  |        | At El. -19.0 Ft., very soft, highly weathered, 10YR 8/2 very pale brown                        |  |               |                        |                    |               |         |
|  |       |        | LIMESTONE, soft, 10YR 8/2 very pale brown  |  |               |                        |                    |               |         |
|  |       |        |  |  |               |                        | -21.0              |               | 35      |

| DRILLING LOG (Cont. Sheet)                       |       |   | INSTALLATION<br>Jacksonville District                  |           |                     | SHEET 3<br>OF 5 SHEETS |         |                   |         |
|--|-------|---|--|-----------|---------------------|------------------------|---------|-------------------|---------|
| PROJECT<br>L-30 Seepage Management Pilot Project |       |   | COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. Ft.) |           | HORIZONTAL<br>NAD83 | VERTICAL<br>NAVD88     |         |                   |         |
| LOCATION COORDINATES<br>X = 825,597 Y = 523,542  |       |   | ELEVATION TOP OF BORING<br>14.0 Ft.                    |           |                     |                        |         |                   |         |
| ELEV.  | DEPTH | LEGEND  | CLASSIFICATION OF MATERIALS                            | %<br>REC. | BOX<br>OR<br>SAMPLE | RQD<br>OR<br>UD        | REMARKS | BLOWS/<br>0.5 FT. | N-VALUE |
|  |       | Highly Weathered<br>At El. -21.0 Ft., fossiliferous, soft,<br>10YR 8/2 very pale brown<br><br>At El. -26.0 Ft., fossiliferous, moderately<br>hard, Unconfined Compression Test on<br>sample from 42 - 45 feet, 10YR 7/1 light gray<br><br>At El. -36.0 Ft., sparsely fossiliferous,<br>moderately hard, 5YR 8/2 pinkish white |  | 90        | BOX                 | RQD                    |         |                   |         |
|  |       |   |  |           | 17                  |                        | 71      |                   |         |
|  |       |   |  |           |                     |                        |         | -26.0             |         |
|  |       |   |  |           | 65                  | BOX                    | RQD     |                   |         |
|  |       |   |  |           |                     | 18                     | 40      |                   |         |
|  |       |   |  |           |                     |                        |         | -31.0             |         |
|  |       |   |  | 85        | BOX                 | RQD                    |         |                   |         |
|  |       |   |  |           |                     | 19                     | 70      |                   |         |
|  |       |   |  |           |                     |                        |         | -36.0             |         |
|  |       |   |  | 40        | BOX                 | RQD                    |         |                   |         |
|  |       |   |  |           |                     | 20                     | 39      |                   |         |
| -41.0  | 55.0  |   |  |           |                     |                        |         | -41.0             |         |

| DRILLING LOG (Cont. Sheet)                       |       |        |   | INSTALLATION<br>Jacksonville District                  |                     |                     | SHEET 4<br>OF 6 SHEETS |                   |
|--|-------|--------|---|--|---------------------|---------------------|------------------------|-------------------|
| PROJECT<br>L-30 Seepage Management Pilot Project |       |        |   | COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. Ft.) |                     | HORIZONTAL<br>NAD83 | VERTICAL<br>NAVD88     |                   |
| LOCATION COORDINATES<br>X = 825,597 Y = 523,542  |       |        |   | ELEVATION TOP OF BORING<br>14.0 Ft.                    |                     |                     |                        |                   |
| ELEV.  | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS                                     | %<br>REC.  | BOX<br>OR<br>SAMPLE | RQD<br>OR<br>UD     | REMARKS                | BLDG.<br>U.S. FT. |
|  |       |        | LIMESTONE, fossiliferous, very hard,<br>5YR 8/2 pinkish white   |  |                     |                     |                        | 55                |
|  |       |        |   | 30   | BOX                 | RQD<br>21 17        |                        |                   |
|  |       |        |   |  |                     |                     | -46.0                  | 60                |
|  |       |        | At El. -46.0 Ft., very hard, 10Y 7/1 light<br>greenish gray     |  |                     |                     |                        |                   |
|  |       |        |   | 85   | BOX                 | RQD<br>22 42        |                        |                   |
|  |       |        |   |  |                     |                     | -51.0                  | 65                |
|  |       |        | At El. -51.0 Ft., fossiliferous, 10Y 7/1 light<br>greenish gray |  |                     |                     |                        |                   |
|  |       |        |   | 85   | BOX                 | RQD<br>23 79        |                        |                   |
|  |       |        |   |  |                     |                     | -56.0                  | 70                |
|  |       |        | At El. -55.0 Ft., 10YR 7/1 light gray                           |  |                     |                     |                        |                   |
|  |       |        |   | 25   | BOX                 | RQD<br>24 8         |                        |                   |
|  |       |        |   |  |                     |                     | -59.5                  |                   |
|  |       |        |   | 33   | 25                  |                     | SPT Sampler            | 6<br>5<br>5       |
| -61.0  | 75.0  |        |   |  |                     |                     | -61.0                  | 75                |

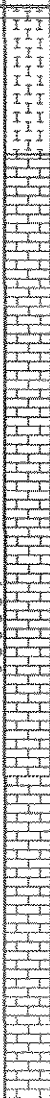

| DRILLING LOG (Cont. Sheet)            |       |        | INSTALLATION  |        | SHEET 5<br>OF 5 SHEETS |           |  |                   |         |
|---------------------------------------|-------|--------|---|--------|------------------------|-----------|--|-------------------|---------|
| PROJECT                               |       |        | COORDINATE SYSTEM/DATUM   |        | HORIZONTAL             | VERTICAL  |  |                   |         |
| L-30 Seepage Management Pilot Project |       |        | State Plane, FLE (U.S. Ft.)   |        | NAD83                  | NAVD88    |  |                   |         |
| LOCATION COORDINATES                  |       |        | ELEVATION TOP OF BORING   |        |                        |           |  |                   |         |
| X = 825,597 Y = 523,542               |       |        | 14.0 Ft.  |        |                        |           |  |                   |         |
| ELEV.                                 | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS   | % REC. | BOX OR SAMPLE          | RQD OR UP | REMARKS  | BLOWS/<br>0.5 FT. | N-VALUE |
|                                       |       |        | SAND, poorly-graded, medium dense, mostly subangular medium to coarse-grained sand-sized quartz, little shell, 5Y 6/3 pale olive (SP) | 93     | 26                     |           | SPT Sampler  | 11                | 75      |
|                                       |       |        |   |        |                        |           |  | 10                | 20      |
|                                       |       |        |   |        |                        |           |  | 10                |         |
|                                       |       |        |   | 60     | 27                     |           | SPT Sampler  | 3                 |         |
|                                       |       |        |   |        |                        |           |  | 4                 | 15      |
|                                       |       |        |   |        |                        |           |  | 11                |         |
| -64.5                                 | 78.5  |        |   |        |                        |           |  | 4                 |         |
| -65.0                                 | 79.0  |        | GRAVEL, poorly-graded, medium dense, little medium-grained sand-sized quartz, 5Y 6/3 pale olive (GP)                                  | 133    | 28                     |           | SPT Sampler  | 8                 | 15      |
|                                       |       |        |   |        |                        |           |  | 7                 |         |
| -66.0                                 | 80.0  |        | CLAY, fat, stiff, few fine to coarse gravel-sized limestone, few quartz, few shell, 5Y 6/3 pale olive (CH)                            | 20     | 29                     |           | SPT Sampler  | 5                 | 80      |
|                                       |       |        |   |        |                        |           |  | 7                 | 27      |
|                                       |       |        | SILT, inorganic-L, stiff to firm, little clay, few fine-grained sand-sized quartz, few shell, 5Y 6/3 pale olive (ML)                  |        |                        |           |  | 20                |         |
|                                       |       |        |   | 93     | 30                     |           | SPT Sampler  | 5                 |         |
|                                       |       |        |   |        |                        |           |  | 5                 | 11      |
|                                       |       |        |   |        |                        |           |  | 6                 |         |
|                                       |       |        |   | 33     | 31                     |           | SPT Sampler  | 4                 |         |
|                                       |       |        |   |        |                        |           |  | 5                 | 10      |
|                                       |       |        |   |        |                        |           |  | 5                 |         |
| -71.5                                 | 85.5  |        |   | 33     | 32                     |           | SPT Sampler  | 2                 |         |
|                                       |       |        |   |        |                        |           |  | 2                 | 5       |
|                                       |       |        |   |        |                        |           |  | 3                 | 85      |
|                                       |       |        | SAND, silty, dense, mostly fine to coarse-grained sand-sized quartz, little silt, few shell, trace clay, 5Y 6/3 pale olive (SM)       | 67     | 33                     |           | SPT Sampler  | 19                |         |
|                                       |       |        |   |        |                        |           |  | 21                | 47      |
| -73.0                                 | 87.0  |        |   |        |                        |           |  | 26                |         |
|                                       |       |        | SAND, poorly-graded, dense, mostly coarse-grained sand-sized quartz, few shell, 5Y 6/3 pale olive (SP)                                | 33     | 34                     |           | SPT Sampler  | 21                |         |
|                                       |       |        |   |        |                        |           |  | 20                | 43      |
|                                       |       |        |   |        |                        |           |  | 23                |         |
|                                       |       |        |   | 8      | 35                     |           | SPT Sampler  | 15                |         |
| -76.0                                 | 90.0  |        |   |        |                        |           |  | 16                | 43      |
|                                       |       |        |   |        |                        |           |  | 27                | 90      |
|                                       |       |        | NOTES:  |        |                        |           | 140# hammer w/30" drop used with 2.0' split spoon (1-3/8" I.D. x 2" O.D.). |                   |         |
|                                       |       |        | 1. Soils are field visually classified in accordance with the Unified Soils Classification System.                                    |        |                        |           |  |                   |         |
|                                       |       |        | 2. Additional Laboratory Testing  |        |                        |           |  |                   |         |
|                                       |       |        | Specific Gravity  |        |                        |           |  |                   |         |



| DRILLING LOG  |       | DIVISION<br>South Atlantic                      |   | INSTALLATION<br>Jacksonville District                      |               | SHEET 1<br>OF 5 SHEETS  |             |                  |         |
|---|-------|---|---|--|---------------|---|-------------|------------------|---------|
| 1. PROJECT<br>L-30 Seepage Management Pilot Project   |       |   |   | 9. SIZE AND TYPE OF BIT<br>See Remarks                     |               |   |             |                  |         |
| 2. BORING DESIGNATION<br>CP07-L30PP-CB-0008   |       | LOCATION COORDINATES<br>X = 825,595 Y = 523,820 |   | 10. COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. Ft.) |               | HORIZONTAL<br>NAD83<br>VERTICAL<br>NAVD88   |             |                  |         |
| 3. DRILLING AGENCY<br>Amdrill   |       | CONTRACTOR FILE NO.                             |   | 11. MANUFACTURER'S DESIGNATION OF DRILL                    |               | <input type="checkbox"/> AUTO HAMMER<br><input checked="" type="checkbox"/> MANUAL HAMMER |             |                  |         |
| 4. NAME OF DRILLER<br>Adam Benson   |       |   |   | 12. TOTAL SAMPLES<br>22                                    |               | DISTURBED<br>0<br>UNDISTURBED (UD)  |             |                  |         |
| 5. DIRECTION OF BORING<br><input checked="" type="checkbox"/> VERTICAL<br><input type="checkbox"/> INCLINED |       |   |   | 13. TOTAL NUMBER CORE BOXES<br>12                          |               | 14. ELEVATION GROUND WATER<br>-4.0 Ft.  |             |                  |         |
| 6. THICKNESS OF OVERBURDEN<br>N/A   |       |   |   | 15. DATE BORING<br>05-15-08                                |               | COMPLETED<br>05-16-08   |             |                  |         |
| 7. DEPTH DRILLED INTO ROCK<br>N/A   |       |   |   | 16. ELEVATION TOP OF BORING<br>14.0 Ft.                    |               | 17. TOTAL RECOVERY FOR BORING<br>67 %   |             |                  |         |
| 8. TOTAL DEPTH OF BORING<br>90.0 Ft.  |       |   |   | 18. SIGNATURE AND TITLE OF INSPECTOR<br>Mark Holmes.       |               |   |             |                  |         |
| ELEV.   | DEPTH | LEGEND  | CLASSIFICATION OF MATERIALS   | % REC.   | BOX OR SAMPLE | ROD OR UD   | REMARKS     | BLOWS<br>0.5 FT. | N-VALUE |
| 14.0  | 0.0   |   | SILT, inorganic-L, very stiff to stiff, Levee Fill material, 10YR 7/3 very pale brown (ML)  | 30   | 1             |   | 14.0        | 22               | 0       |
|   |       |   |   |  |               |   | SPT Sampler | 17               | 29      |
|   |       |   |   |  |               |   | 12.5        | 12               |         |
|   |       |   |   | 30   | 2             |   | SPT Sampler | 9                | 17      |
|   |       |   |   |  |               |   | 11.0        | 10               |         |
|   |       |   |   |  |               |   |             | 7                |         |
|   |       |   |   | 0  | 3             |   | SPT Sampler | 4                | 12      |
|   |       |   |   |  |               |   |             | 6                |         |
| 9.5   | 4.5   |   | SAND, poorly-graded, medium dense, mostly subangular to subrounded fine to coarse-grained sand-sized quartz, 10YR 6/3 pale brown (SP) | 65   | 4             |   | SPT Sampler | 6                | 5       |
|   |       |   |   |  |               |   |             | 5                | 13      |
| 8.0   | 6.0   |   | GRAVEL, poorly-graded, loose to medium dense, few subangular to subrounded coarse-grained sand-sized quartz, 10YR 6/3 pale brown (GP) | 50   | 5             |   | SPT Sampler | 5                | 8       |
|   |       |   |   |  |               |   |             | 4                |         |
|   |       |   |   |  |               |   |             | 4                |         |
|   |       |   |   |  |               |   | 6.5         | 4                |         |
|   |       |   |   | 30   | 6             |   | SPT Sampler | 3                | 13      |
|   |       |   |   |  |               |   |             | 6                |         |
|   |       |   |   |  |               |   | 5.0         | 7                |         |
|   |       |   |   | 50   | 7             |   | SPT Sampler | 5                | 10      |
|   |       |   |   |  |               |   |             | 5                | 10      |
|   |       |   |   |  |               |   | 3.5         | 5                |         |
|   |       |   |   | 50   | 8             |   | SPT Sampler | 4                | 12      |
|   |       |   |   |  |               |   |             | 5                |         |
| 2.0   | 12.0  |   | LIMESTONE, hard, 10YR 8/2 very pale brown   | 10   | 9             |   | SPT Sampler | 1                | 3       |
|   |       |   |   |  |               |   |             | 1                |         |
|   |       |   |   |  |               |   | 0.5         | 2                |         |
|   |       |   |   | 30   | 10            |   | SPT Sampler | 5                | 10      |
|   |       |   |   |  |               |   |             | 6                |         |
|   |       |   |   |  |               |   |             | 4                |         |
|   |       |   |   |  |               |   | -1.0        |                  |         |

| DRILLING LOG (Cont. Sheet)                       |       |        |   | INSTALLATION<br>Jacksonville District                  |                     |                     | SHEET 2<br>OF 5 SHEETS |                   |         |
|--|-------|--------|---|--|---------------------|---------------------|------------------------|-------------------|---------|
| PROJECT<br>L-30 Seepage Management Pilot Project |       |        |   | COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. Ft.) |                     | HORIZONTAL<br>NAD83 | VERTICAL<br>NAVD88     |                   |         |
| LOCATION COORDINATES<br>X = 825,595 Y = 523,820  |       |        |   | ELEVATION TOP OF BORING<br>14.0 Ft.                    |                     |                     |                        |                   |         |
| ELEV.  | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS                                     | %<br>REC.  | BOX<br>OR<br>SAMPLE | RQD<br>OR<br>UD     | REMARKS                | BLOWS/<br>0.5 FT. | N-VALUE |
|  |       |        |   | 25   | 11                  |                     | SPT Sampler            | 3                 | 15      |
|  |       |        |   |  |                     |                     |                        | 2                 |         |
|  |       |        |   |  |                     |                     | -2.5                   | 4                 | 6       |
| -3.0   | 17.0  |        |   |  |                     |                     |                        | 6                 |         |
| -3.5   | 17.5  |        | PEAT, stiff (PT)  | 80   | 12                  |                     | SPT Sampler            | 18                |         |
|  |       |        | LIMESTONE, 10YR 7/1 light gray                                  |  |                     |                     |                        | 30                | 48      |
|  |       |        |   | 60   | BOX                 | 13                  |                        |                   |         |
|  |       |        |   |  |                     |                     | -6.0                   |                   |         |
|  |       |        | At El. -6.0 Ft., sparsely fossiliferous,<br>10YR 7/1 light gray |  |                     |                     |                        |                   |         |
|  |       |        |   | 95   | BOX RQD             | 14 12               |                        |                   |         |
|  |       |        |   |  |                     |                     |                        |                   |         |
| -11.0  | 25.0  |        |   |  |                     |                     | -11.0                  |                   | 20      |
|  |       |        | LIMESTONE, fossiliferous, hard,<br>10YR 7/1 light gray          |  |                     |                     |                        |                   |         |
|  |       |        |   | 50   | BOX RQD             | 15 53               |                        |                   |         |
|  |       |        |   |  |                     |                     | -16.0                  |                   |         |
|  |       |        |   |  |                     |                     |                        |                   |         |
| -17.0  | 31.0  |        |   |  |                     |                     |                        |                   |         |
| -17.5  | 31.5  |        | LIMESTONE, very soft, highly weathered,<br>10YR 7/1 light gray  |  |                     |                     |                        |                   |         |
|  |       |        | LIMESTONE, fossiliferous, hard,<br>10YR 7/1 light gray          |  |                     |                     |                        |                   |         |
|  |       |        |   | 75   | BOX RQD             | 16 58               |                        |                   |         |
|  |       |        |   |  |                     |                     |                        |                   |         |
| -20.0  | 34.0  |        |   |  |                     |                     |                        |                   |         |
| -20.5  | 34.5  |        | LIMESTONE, very soft, highly weathered,<br>10YR 7/1 light gray  |  |                     |                     |                        |                   |         |
|  |       |        | LIMESTONE, fossiliferous, hard, Unconfined                      |  |                     |                     |                        |                   |         |
|  |       |        |   |  |                     |                     | -21.0                  |                   | 35      |

| DRILLING LOG (Cont. Sheet)                       |       |        | INSTALLATION<br>Jacksonville District   |           | SHEET 3<br>OF 5 SHEETS |                    |         |                   |         |
|--|-------|--------|---|-----------|------------------------|--------------------|---------|-------------------|---------|
| PROJECT<br>L-30 Seepage Management Pilot Project |       |        | COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. Ft.)                        |           | HORIZONTAL<br>NAD83    | VERTICAL<br>NAVD88 |         |                   |         |
| LOCATION COORDINATES<br>X = 825,595 Y = 523,820  |       |        | ELEVATION TOP OF BORING<br>14.0 Ft.   |           |                        |                    |         |                   |         |
| ELEV.  | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS   | %<br>REC. | BOX<br>OR<br>SAMPLE    | ROD<br>OR<br>UD    | REMARKS | BLOWS/<br>0.5 FT. | N-VALUE |
|  |       |        | Compression test on sample from 35 - 40 feet, 10YR 7/1 light gray             |           |                        |                    |         |                   | 35      |
| -22.5  | 36.5  |        | LIMESTONE, soft, highly weathered   | 95        | BOX                    | RQD                |         |                   |         |
|  |       |        |   |           | 17                     |                    | 81      |                   |         |
| -26.0  | 40.0  |        |   |           |                        |                    | -26.0   |                   | 40      |
|  |       |        | LIMESTONE, fossiliferous, hard, 2.5YR 8/2 pinkish white                       | 80        | BOX                    | RQD                |         |                   |         |
|  |       |        |   |           | 18                     |                    | 43      |                   |         |
|  |       |        |   |           |                        |                    | -31.0   |                   | 45      |
| -34.0  | 48.0  |        | At El. -32.5 Ft., large marine fossils grading to smaller with depth          | 85        | BOX                    | RQD                |         |                   |         |
|  |       |        |   |           | 19                     |                    | 57      |                   |         |
|  |       |        | LIMESTONE, noticable burrowing increasing with depth, 2.5YR 8/2 pinkish white |           |                        |                    |         | -36.0             |         |
| -38.0  | 52.0  |        | LIMESTONE, soft, decreasing fossils and burrows, 2.5YR 8/3 pink               | 60        | BOX                    | RQD                |         |                   |         |
|  |       |        |   |           | 20                     |                    | 26      |                   |         |
|  |       |        |   |           |                        |                    | -41.0   |                   | 55      |

| DRILLING LOG (Cont. Sheet)                       |       |   |  | INSTALLATION<br>Jacksonville District |               |                    | SHEET 4<br>OF 5 SHEETS |                |         |
|--|-------|---|--|---------------------------------------|---------------|--------------------|------------------------|----------------|---------|
| PROJECT<br>L-30 Seepage Management Pilot Project |       | COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. Ft.)                              |  | HORIZONTAL<br>NAD83                   |               | VERTICAL<br>NAVD88 |                        |                |         |
| LOCATION COORDINATES<br>X = 825,595 Y = 523,820  |       |   |  | ELEVATION TOP OF BORING<br>14.0 Ft.   |               |                    |                        |                |         |
| ELEV.  | DEPTH | LEGEND  | CLASSIFICATION OF MATERIALS  | % REC.                                | BOX OR SAMPLE | RQD OR UD          | REMARKS                | BLOWS/ 0.5 FT. | N-VALUE |
| -43.0  | 57.0  |   | LIMESTONE, hard, numerous marine fossils   | 85                                    | BOX           | RQD                |                        |                |         |
|  |       |   | At El. -46.0 Ft., fossiliferous  |                                       | 21            | 32                 |                        | -46.0          |         |
|  |       |   | At El. -48.0 Ft., grading to mudstone, with sand increasing with depth                     | 60                                    | BOX           | RQD                |                        |                |         |
|  |       |   |  |                                       | 22            | 18                 |                        | -51.0          |         |
| -56.0  | 70.0  |  | SAND, poorly-graded, 10Y 8/1 light greenish gray (SP)                                      | 60                                    | BOX           | RQD                |                        |                |         |
|  |       |   | At El. -59.0 Ft., few fine to coarse-grained sand-sized shell, 10Y 8/1 light greenish gray | 40                                    | BOX           | RQD                |                        |                |         |
|  |       |   |  |                                       | 24            | 30                 |                        | -61.0          |         |

| DRILLING LOG (Cont. Sheet)                       |       |        | INSTALLATION<br>Jacksonville District  |           |                     | SHEET 5<br>OF 5 SHEETS |   |                   |         |
|--|-------|--------|--|-----------|---------------------|------------------------|---|-------------------|---------|
| PROJECT<br>L-30 Seepage Management Pilot Project |       |        | COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. Ft.)   |           | HORIZONTAL<br>NAD83 | VERTICAL<br>NAVD88     |   |                   |         |
| LOCATION COORDINATES<br>X = 825,595 Y = 523,820  |       |        | ELEVATION TOP OF BORING<br>14.0 Ft.  |           |                     |                        |   |                   |         |
| ELEV.  | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS  | %<br>REC. | BOX OR<br>SAMPLE    | RQD<br>OR<br>UD        | REMARKS   | BLOWS/<br>0.5 FT. | N-VALUE |
|  |       |        | At El. -61.0 Ft., loose to medium dense,<br>5G 8/2 pale green  | 50        | 25                  |                        | SPT Sampler   | 9                 | 75      |
|  |       |        |  |           |                     |                        |   | 5                 | 10      |
| -63.0  | 77.0  |        |  |           |                     |                        |   | 5                 |         |
|  |       |        |  |           |                     |                        |   | 7                 |         |
| -63.5  | 77.5  |        | SAND, clayey, loose (SC)   | 85        | 26                  |                        | SPT Sampler   | 8                 | 19      |
|  |       |        |  |           |                     |                        |   | 11                |         |
|  |       |        | SAND, poorly-graded, medium dense, few<br>shell (SP)   |           |                     |                        |   | 7                 |         |
|  |       |        |  | 50        | 27                  |                        | SPT Sampler   | 10                | 24      |
|  |       |        |  |           |                     |                        |   | 14                |         |
| -66.0  | 80.0  |        |  |           |                     |                        |   | 4                 |         |
|  |       |        |  |           |                     |                        |   | 9                 | 80      |
| -66.5  | 80.5  |        | GRAVEL, poorly-graded, medium dense<br>(GP)  | 90        | 28                  |                        | SPT Sampler   | 14                | 23      |
|  |       |        | SAND, poorly-graded, medium dense,<br>10Y 3/1 dark greenish gray (SP)  |           |                     |                        |   | 10                |         |
|  |       |        |  | 90        | 29                  |                        | SPT Sampler   | 11                | 22      |
|  |       |        |  |           |                     |                        |   | 11                |         |
|  |       |        |  |           |                     |                        |   | 3                 |         |
|  |       |        |  | 90        | 30                  |                        | SPT Sampler   | 6                 | 16      |
|  |       |        |  |           |                     |                        |   | 10                |         |
| -70.5  | 84.5  |        |  |           |                     |                        |   | 5                 |         |
|  |       |        | SAND, silty, medium dense, 10Y 3/1 dark<br>greenish gray (SM)  | 95        | 31                  |                        | SPT Sampler   | 10                | 22      |
|  |       |        |  |           |                     |                        |   | 12                | 85      |
|  |       |        |  |           |                     |                        |   | 2                 |         |
|  |       |        | At El. -72.0 Ft., loose to medium dense,<br>10Y 3/1 dark greenish gray   | 95        | 32                  |                        | SPT Sampler   | 3                 | 10      |
|  |       |        |  |           |                     |                        |   | 7                 |         |
|  |       |        |  |           |                     |                        |   | 6                 |         |
|  |       |        |  | 100       | 33                  |                        | SPT Sampler   | 5                 | 10      |
|  |       |        |  |           |                     |                        |   | 5                 |         |
|  |       |        |  |           |                     |                        |   | 4                 |         |
|  |       |        |  | 100       | 34                  |                        | SPT Sampler   | 6                 | 14      |
| -76.0  | 90.0  |        |  |           |                     |                        |   | 8                 | 90      |
|  |       |        | NOTES:<br>1. Soils are field visually classified in<br>accordance with the Unified Soils<br>Classification System.<br>2. Additional Laboratory Testing<br>Specific Gravity |           |                     |                        | 140# hammer w/30" drop used with<br>2.0' split spoon (1-3/8" I.D. x 2" O.D.). |                   |         |

|  |  |  |                |   |  |   |                              |
|--|--|--|----------------|---|--|---|------------------------------|
| <b>DRILLING LOG</b>  |  | <b>DIVISION</b><br>South Atlantic                            |                | <b>INSTALLATION</b><br>Jacksonville District  |  | <b>SHEET 1</b><br><b>OF 5 SHEETS</b>          |                              |
| <b>1. PROJECT</b><br>L-30 Seepage Management Pilot Project   |  |  |                | <b>9. SIZE AND TYPE OF BIT</b> See Remarks  |  |   |                              |
| <b>2. BORING DESIGNATION</b><br>CP07-L30PP-CB-0009   |  |  |                | <b>10. COORDINATE SYSTEM/DATUM</b><br>State Plane, FLE (U.S. Ft.)   |  | <b>HORIZONTAL</b><br>NAD83                    | <b>VERTICAL</b><br>NAVD88    |
| <b>3. DRILLING AGENCY</b><br>Amrdrill  |  | <b>LOCATION COORDINATES</b><br>X = 825,886 Y = 524,095       |                | <b>11. MANUFACTURER'S DESIGNATION OF DRILL</b><br><input type="checkbox"/> AUTO HAMMER<br><input checked="" type="checkbox"/> MANUAL HAMMER |  |   |                              |
| <b>4. NAME OF DRILLER</b><br>Adam Benson   |  | <b>CONTRACTOR FILE NO.</b>                                   |                | <b>12. TOTAL SAMPLES</b><br>22  |  | <b>DISTURBED</b><br>0                         | <b>UNDISTURBED (UD)</b>      |
| <b>5. DIRECTION OF BORING</b><br><input checked="" type="checkbox"/> VERTICAL<br><input type="checkbox"/> INCLINED |  | <b>DEG. FROM VERTICAL</b>                                    | <b>BEARING</b> | <b>13. TOTAL NUMBER CORE BOXES</b><br>12  |  | <b>14. ELEVATION GROUND WATER</b><br>-4.0 Ft. |                              |
| <b>6. THICKNESS OF OVERBURDEN</b><br>N/A   |  | <b>7. DEPTH DRILLED INTO ROCK</b><br>N/A                     |                | <b>15. DATE BORING</b><br>05-19-08  |  | <b>STARTED</b><br>05-19-08                    | <b>COMPLETED</b><br>05-20-08 |
| <b>8. TOTAL DEPTH OF BORING</b><br>89.0 Ft.  |  | <b>9. SIGNATURE AND TITLE OF INSPECTOR</b><br>Larry Mattila, |                |   |  |   |                              |

| ELEV. | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS                                  | % REC. | BOX OR SAMPLE | RQD OR UD | REMARKS     | BLOWS/<br>0.5 FT.  | N-VALUE |
|-------|-------|--------|--|--------|---------------|-----------|-------------|--------------------|---------|
| 14.0  | 0.0   |        |  |        |               |           | 14.0        |                    |         |
|       |       |        | GRAVEL, poorly-graded, dense, Levee Fill Material (GP)       | 40     | 1             |           | SPT Sampler | 18<br>26           | 43      |
|       |       |        | From El. 12.5 to -3.5 Ft., dense to loose, trace clayey sand | 40     | 2             |           | SPT Sampler | 17<br>16<br>27     | 38      |
|       |       |        |  | 30     | 3             |           | SPT Sampler | 11<br>6<br>6       | 13      |
|       |       |        |  | 30     | 4             |           | SPT Sampler | 9.5<br>6<br>8      | 22      |
|       |       |        |  | 20     | 5             |           | SPT Sampler | 14<br>3<br>4       | 9       |
|       |       |        |  | 30     | 6             |           | SPT Sampler | 6.5<br>6<br>5      | 10      |
|       |       |        |  | 40     | 7             |           | SPT Sampler | 5.0<br>5<br>6      | 12      |
|       |       |        |  | 20     | 8             |           | SPT Sampler | 3.5<br>6<br>8      | 15      |
|       |       |        |  | 30     | 9             |           | SPT Sampler | 2.0<br>6<br>10     | 19      |
|       |       |        |  | 20     | 10            |           | SPT Sampler | 0.5<br>9<br>4<br>4 | 8       |
|       |       |        |  |        |               |           | -1.0        | 4                  |         |

(Continued)

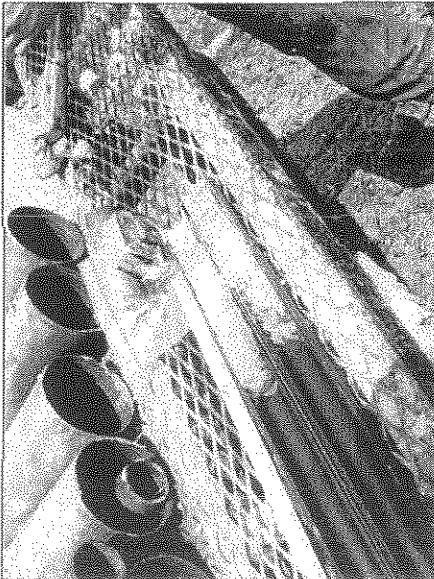
| DRILLING LOG (Cont. Sheet)            |       |        | INSTALLATION   |           | SHEET 2<br>OF 5 SHEETS |                 |             |                   |         |
|---------------------------------------|-------|--------|--|-----------|------------------------|-----------------|-------------|-------------------|---------|
| PROJECT                               |       |        | COORDINATE SYSTEM/DATUM                                |           | HORIZONTAL             | VERTICAL        |             |                   |         |
| L-30 Seepage Management Pilot Project |       |        | State Plane, FLE (U.S. Ft.)                            |           | NAD83                  | NAVD88          |             |                   |         |
| LOCATION COORDINATES                  |       |        | ELEVATION TOP OF BORING                                |           |                        |                 |             |                   |         |
| X = 825.886 Y = 524.095               |       |        | 14.0 Ft.   |           |                        |                 |             |                   |         |
| ELEV.                                 | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS                            | %<br>REC. | BOX<br>OR<br>SAMPLE    | RQD<br>OR<br>UD | REMARKS     | BLOWS/<br>0.5 FT. | N-VALUE |
| -2.0                                  | 16.0  |        | PEAT, stiff, some clay (PT)                            | 20        | 11                     |                 | SPT Sampler | 3                 | 15      |
|                                       |       |        |  |           |                        |                 |             |                   | 3       |
| -3.5                                  | 17.5  |        | LIMESTONE, weathered, vuggy, white                     | 40        | 12                     |                 | SPT Sampler | 7                 | 36      |
|                                       |       |        |  |           |                        |                 |             |                   | 4       |
|                                       |       |        |  |           |                        |                 |             | 21                |         |
| -6.0                                  | 20.0  |        | LIMESTONE, hard, weathered, vuggy, some micrite, white | 60        | BOXRQD                 | 13 31           |             |                   |         |
|                                       |       |        |  |           |                        |                 |             |                   |         |
|                                       |       |        | LIMESTONE, hard, weathered, vuggy, some micrite, white | 80        | BOXRQD                 | 14 66           |             |                   |         |
|                                       |       |        |  |           |                        |                 |             |                   |         |
|                                       |       |        | LIMESTONE, hard, weathered, vuggy, some micrite, white |           |                        |                 |             |                   |         |
|                                       |       |        |  |           |                        |                 |             |                   |         |
|                                       |       |        | LIMESTONE, hard, weathered, vuggy, some micrite, white | 30        | BOXRQD                 | 15 10           |             |                   |         |
|                                       |       |        |  |           |                        |                 |             |                   |         |
|                                       |       |        | LIMESTONE, hard, weathered, vuggy, some micrite, white |           |                        |                 |             |                   |         |
|                                       |       |        |  |           |                        |                 |             |                   |         |
|                                       |       |        | LIMESTONE, hard, weathered, vuggy, some micrite, white | 50        | BOXRQD                 | 16 30           |             |                   |         |
|                                       |       |        |  |           |                        |                 |             |                   |         |
|                                       |       |        | LIMESTONE, hard, weathered, vuggy, some micrite, white |           |                        |                 |             |                   |         |
|                                       |       |        |  |           |                        |                 |             |                   |         |
|                                       |       |        | LIMESTONE, hard, weathered, vuggy, some micrite, white |           |                        |                 |             |                   |         |
|                                       |       |        |  |           |                        |                 |             |                   |         |
|                                       |       |        | LIMESTONE, hard, weathered, vuggy, some micrite, white |           |                        |                 |             |                   |         |
|                                       |       |        |  |           |                        |                 |             |                   |         |
|                                       |       |        | LIMESTONE, hard, weathered, vuggy, some micrite, white |           |                        |                 |             |                   |         |
|                                       |       |        |  |           |                        |                 |             |                   |         |
|                                       |       |        | LIMESTONE, hard, weathered, vuggy, some micrite, white |           |                        |                 |             |                   |         |
|                                       |       |        |  |           |                        |                 |             |                   |         |
|                                       |       |        | LIMESTONE, hard, weathered, vuggy, some micrite, white |           |                        |                 |             |                   |         |
|                                       |       |        |  |           |                        |                 |             |                   |         |
|                                       |       |        | LIMESTONE, hard, weathered, vuggy, some micrite, white |           |                        |                 |             |                   |         |
|                                       |       |        |  |           |                        |                 |             |                   |         |
|                                       |       |        | LIMESTONE, hard, weathered, vuggy, some micrite, white |           |                        |                 |             |                   |         |
|                                       |       |        |  |           |                        |                 |             |                   |         |
|                                       |       |        | LIMESTONE, hard, weathered, vuggy, some micrite, white |           |                        |                 |             |                   |         |
|                                       |       |        |  |           |                        |                 |             |                   |         |
|                                       |       |        | LIMESTONE, hard, weathered, vuggy, some micrite, white |           |                        |                 |             |                   |         |
|                                       |       |        |  |           |                        |                 |             |                   |         |
|                                       |       |        | LIMESTONE, hard, weathered, vuggy, some micrite, white |           |                        |                 |             |                   |         |
|                                       |       |        |  |           |                        |                 |             |                   |         |
|                                       |       |        | LIMESTONE, hard, weathered, vuggy, some micrite, white |           |                        |                 |             |                   |         |
|                                       |       |        |  |           |                        |                 |             |                   |         |
|                                       |       |        | LIMESTONE, hard, weathered, vuggy, some micrite, white |           |                        |                 |             |                   |         |
|                                       |       |        |  |           |                        |                 |             |                   |         |
|                                       |       |        | LIMESTONE, hard, weathered, vuggy, some micrite, white |           |                        |                 |             |                   |         |
|                                       |       |        |  |           |                        |                 |             |                   |         |
|                                       |       |        | LIMESTONE, hard, weathered, vuggy, some micrite, white |           |                        |                 |             |                   |         |
|                                       |       |        |  |           |                        |                 |             |                   |         |
|                                       |       |        | LIMESTONE, hard, weathered, vuggy, some micrite, white |           |                        |                 |             |                   |         |
|                                       |       |        |  |           |                        |                 |             |                   |         |
|                                       |       |        | LIMESTONE, hard, weathered, vuggy, some micrite, white |           |                        |                 |             |                   |         |
|                                       |       |        |  |           |                        |                 |             |                   |         |
|                                       |       |        | LIMESTONE, hard, weathered, vuggy, some micrite, white |           |                        |                 |             |                   |         |
|                                       |       |        |  |           |                        |                 |             |                   |         |
|                                       |       |        | LIMESTONE, hard, weathered, vuggy, some micrite, white |           |                        |                 |             |                   |         |
|                                       |       |        |  |           |                        |                 |             |                   |         |
|                                       |       |        | LIMESTONE, hard, weathered, vuggy, some micrite, white |           |                        |                 |             |                   |         |
|                                       |       |        |  |           |                        |                 |             |                   |         |
|                                       |       |        | LIMESTONE, hard, weathered, vuggy, some micrite, white |           |                        |                 |             |                   |         |
|                                       |       |        |  |           |                        |                 |             |                   |         |
|                                       |       |        | LIMESTONE, hard, weathered, vuggy, some micrite, white |           |                        |                 |             |                   |         |
|                                       |       |        |  |           |                        |                 |             |                   |         |
|                                       |       |        | LIMESTONE, hard, weathered, vuggy, some micrite, white |           |                        |                 |             |                   |         |
|                                       |       |        |  |           |                        |                 |             |                   |         |
|                                       |       |        | LIMESTONE, hard, weathered, vuggy, some micrite, white |           |                        |                 |             |                   |         |
|                                       |       |        |  |           |                        |                 |             |                   |         |
|                                       |       |        | LIMESTONE, hard, weathered, vuggy, some micrite, white |           |                        |                 |             |                   |         |
|                                       |       |        |  |           |                        |                 |             |                   |         |
|                                       |       |        | LIMESTONE, hard, weathered, vuggy, some micrite, white |           |                        |                 |             |                   |         |
|                                       |       |        |  |           |                        |                 |             |                   |         |
|                                       |       |        | LIMESTONE, hard, weathered, vuggy, some micrite, white |           |                        |                 |             |                   |         |
|                                       |       |        |  |           |                        |                 |             |                   |         |
|                                       |       |        | LIMESTONE, hard, weathered, vuggy, some micrite, white |           |                        |                 |             |                   |         |
|                                       |       |        |  |           |                        |                 |             |                   |         |
|                                       |       |        | LIMESTONE, hard, weathered, vuggy, some micrite, white |           |                        |                 |             |                   |         |
|                                       |       |        |  |           |                        |                 |             |                   |         |
|                                       |       |        | LIMESTONE, hard, weathered, vuggy, some micrite, white |           |                        |                 |             |                   |         |
|                                       |       |        |  |           |                        |                 |             |                   |         |
|                                       |       |        | LIMESTONE, hard, weathered, vuggy, some micrite, white |           |                        |                 |             |                   |         |
|                                       |       |        |  |           |                        |                 |             |                   |         |
|                                       |       |        | LIMESTONE, hard, weathered, vuggy, some micrite, white |           |                        |                 |             |                   |         |
|                                       |       |        |  |           |                        |                 |             |                   |         |
|                                       |       |        | LIMESTONE, hard, weathered, vuggy, some micrite, white |           |                        |                 |             |                   |         |
|                                       |       |        |  |           |                        |                 |             |                   |         |
|                                       |       |        | LIMESTONE, hard, weathered, vuggy, some micrite, white |           |                        |                 |             |                   |         |
|                                       |       |        |  |           |                        |                 |             |                   |         |
|                                       |       |        | LIMESTONE, hard, weathered, vuggy, some micrite, white |           |                        |                 |             |                   |         |
|                                       |       |        |  |           |                        |                 |             |                   |         |
|                                       |       |        | LIMESTONE, hard, weathered, vuggy, some micrite, white |           |                        |                 |             |                   |         |
|                                       |       |        |  |           |                        |                 |             |                   |         |
|                                       |       |        | LIMESTONE, hard, weathered, vuggy, some micrite, white |           |                        |                 |             |                   |         |
|                                       |       |        |  |           |                        |                 |             |                   |         |
|                                       |       |        | LIMESTONE, hard, weathered, vuggy, some micrite, white |           |                        |                 |             |                   |         |
|                                       |       |        |  |           |                        |                 |             |                   |         |
|                                       |       |        | LIMESTONE, hard, weathered, vuggy, some micrite, white |           |                        |                 |             |                   |         |
|                                       |       |        |  |           |                        |                 |             |                   |         |
|                                       |       |        | LIMESTONE, hard, weathered, vuggy, some micrite, white |           |                        |                 |             |                   |         |
|                                       |       |        |  |           |                        |                 |             |                   |         |
|                                       |       |        | LIMESTONE, hard, weathered, vuggy, some micrite, white |           |                        |                 |             |                   |         |
|                                       |       |        |  |           |                        |                 |             |                   |         |
|                                       |       |        | LIMESTONE, hard, weathered, vuggy, some micrite, white |           |                        |                 |             |                   |         |
|                                       |       |        |  |           |                        |                 |             |                   |         |
|                                       |       |        | LIMESTONE, hard, weathered, vuggy, some micrite, white |           |                        |                 |             |                   |         |
|                                       |       |        |  |           |                        |                 |             |                   |         |
|                                       |       |        | LIMESTONE, hard, weathered, vuggy, some micrite, white |           |                        |                 |             |                   |         |
|                                       |       |        |  |           |                        |                 |             |                   |         |
|                                       |       |        | LIMESTONE, hard, weathered, vuggy, some micrite, white |           |                        |                 |             |                   |         |
|                                       |       |        |  |           |                        |                 |             |                   |         |
|                                       |       |        | LIMESTONE, hard, weathered, vuggy, some micrite, white |           |                        |                 |             |                   |         |
|                                       |       |        |  |           |                        |                 |             |                   |         |
|                                       |       |        | LIMESTONE, hard, weathered, vuggy, some micrite, white |           |                        |                 |             |                   |         |
|                                       |       |        |  |           |                        |                 |             |                   |         |
|                                       |       |        | LIMESTONE, hard, weathered, vuggy, some micrite, white |           |                        |                 |             |                   |         |
|                                       |       |        |  |           |                        |                 |             |                   |         |
|                                       |       |        | LIMESTONE, hard, weathered, vuggy, some micrite, white |           |                        |                 |             |                   |         |
|                                       |       |        |  |           |                        |                 |             |                   |         |
|                                       |       |        | LIMESTONE, hard, weathered, vuggy, some micrite, white |           |                        |                 |             |                   |         |
|                                       |       |        |  |           |                        |                 |             |                   |         |
|                                       |       |        | LIMESTONE, hard, weathered, vuggy, some micrite, white |           |                        |                 |             |                   |         |
|                                       |       |        |  |           |                        |                 |             |                   |         |
|                                       |       |        | LIMESTONE, hard, weathered, vuggy, some micrite, white |           |                        |                 |             |                   |         |
|                                       |       |        |  |           |                        |                 |             |                   |         |
|                                       |       |        | LIMESTONE, hard, weathered, vuggy, some micrite, white |           |                        |                 |             |                   |         |
|                                       |       |        |  |           |                        |                 |             |                   |         |
|                                       |       |        | LIMESTONE, hard, weathered, vuggy, some micrite, white |           |                        |                 |             |                   |         |
|                                       |       |        |  |           |                        |                 |             |                   |         |
|                                       |       |        | LIMESTONE, hard, weathered, vuggy, some micrite, white |           |                        |                 |             |                   |         |
|                                       |       |        |  |           |                        |                 |             |                   |         |
|                                       |       |        | LIMESTONE, hard, weathered, vuggy, some micrite, white |           |                        |                 |             |                   |         |
|                                       |       |        |  |           |                        |                 |             |                   |         |
|                                       |       |        | LIMESTONE, hard, weathered, vuggy, some micrite, white |           |                        |                 |             |                   |         |
|                                       |       |        |  |           |                        |                 |             |                   |         |
|                                       |       |        | LIMESTONE, hard, weathered, vuggy, some micrite, white |           |                        |                 |             |                   |         |
|                                       |       |        |  |           |                        |                 |             |                   |         |
|                                       |       |        | LIMESTONE, hard, weathered, vuggy, some micrite, white |           |                        |                 |             |                   |         |
|                                       |       |        |  |           |                        |                 |             |                   |         |
|                                       |       |        | LIMESTONE, hard, weathered, vuggy, some micrite, white |           |                        |                 |             |                   |         |
|                                       |       |        |  |           |                        |                 |             |                   |         |
|                                       |       |        | LIMESTONE, hard, weathered, vuggy, some micrite, white |           |                        |                 |             |                   |         |
|                                       |       |        |  |           |                        |                 |             |                   |         |
|                                       |       |        | LIMESTONE, hard, weathered, vuggy, some micrite, white |           |                        |                 |             |                   |         |
|                                       |       |        |  |           |                        |                 |             |                   |         |
|                                       |       |        | LIMESTONE, hard, weathered, vuggy, some micrite, white |           |                        |                 |             |                   |         |
|                                       |       |        |  |           |                        |                 |             |                   |         |
|                                       |       |        | LIMESTONE, hard, weathered, vuggy, some micrite, white |           |                        |                 |             |                   |         |
|                                       |       |        |  |           |                        |                 |             |                   |         |
|                                       |       |        | LIMESTONE, hard, weathered, vuggy, some micrite, white |           |                        |                 |             |                   |         |
|                                       |       |        |  |           |                        |                 |             |                   |         |
|                                       |       |        | LIMESTONE, hard, weathered, vuggy, some micrite, white |           |                        |                 |             |                   |         |
|                                       |       |        |  |           |                        |                 |             |                   |         |
|                                       |       |        | LIMESTONE, hard, weathered, vuggy, some micrite, white |           |                        |                 |             |                   |         |
|                                       |       |        |  |           |                        |                 |             |                   |         |
|                                       |       |        | LIMESTONE, hard, weathered, vuggy, some micrite, white |           |                        |                 |             |                   |         |

| DRILLING LOG (Cont. Sheet)                       |       |        | INSTALLATION<br>Jacksonville District   |           |                     | SHEET 3<br>OF 5 SHEETS |         |                   |         |
|--|-------|--------|---|-----------|---------------------|------------------------|---------|-------------------|---------|
| PROJECT<br>L-30 Seepage Management Pilot Project |       |        | COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. FL)   |           | HORIZONTAL<br>NAD83 | VERTICAL<br>NAVD88     |         |                   |         |
| LOCATION COORDINATES<br>X = 825,886 Y = 524,095  |       |        | ELEVATION TOP OF BORING<br>14.0 Ft.   |           |                     |                        |         |                   |         |
| ELEV.  | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS   | %<br>REC. | BOX<br>OR<br>SAMPLE | RQD<br>OR<br>UD        | REMARKS | BLOWS/<br>0.5 FT. | N-VALUE |
|  |       |        | From El. -21.0 to -26.0 Ft., hard, weathered, trace vugs, shell molds, white  | 85        | BOX                 | RQD<br>17 68           |         |                   |         |
|  |       |        | From El. -26.0 to -31.0 Ft., weathered, vuggy, sparite in vugs, shell molds and some shells, Unconfined Compression test on sample from 38 - 40 feet, 10YR 7/1 light gray | 90        | BOX                 | RQD<br>18 73           |         |                   |         |
| -31.0  | 45.0  |        | LIMESTONE, moderately hard, weathered, some vugs and shell molds, hard, white   | 90        | BOX                 | RQD<br>19 81           |         |                   |         |
|  |       |        | From El. -36.0 to -41.0 Ft., weathered, vuggy, sparite in vugs, white   | 65        | BOX                 | RQD<br>20 20           |         |                   |         |

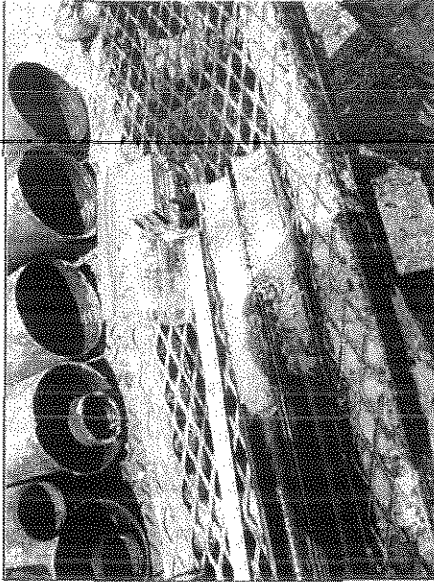


| DRILLING LOG (Cont. Sheet)                       |       |        | INSTALLATION<br>Jacksonville District   |           | SHEET 4<br>OF 5 SHEETS |                    |             |                   |         |
|--|-------|--------|---|-----------|------------------------|--------------------|-------------|-------------------|---------|
| PROJECT<br>L-30 Seepage Management Pilot Project |       |        | COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. Ft.)  |           | HORIZONTAL<br>NAD83    | VERTICAL<br>NAVD88 |             |                   |         |
| LOCATION COORDINATES<br>X = 825,886 Y = 524,095  |       |        | ELEVATION TOP OF BORING<br>14.0 Ft.   |           |                        |                    |             |                   |         |
| ELEV.  | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS   | %<br>REC. | BOX<br>OR<br>SAMPLE    | ROD<br>OR<br>UD    | REMARKS     | BLOWS/<br>0.5 FT. | N-VALUE |
|  |       |        | From El. -41.0 to -46.0 Ft., very vuggy, shell molds and marine fossils, white  | 20        | BOX                    | RQD<br>21 0        |             |                   |         |
|  |       |        | From El. -46.0 to -51.0 Ft., vuggy, some shell and sparite, white   | 55        | BOX                    | RQD<br>22 8        |             |                   |         |
|  |       |        | From El. -51.0 to -56.0 Ft., very vuggy, some shells and sparite, pinkish-tan   | 50        | BOX                    | RQD<br>23 8        |             |                   |         |
|  |       |        | From El. -56.0 to -60.0 Ft., somewhat vuggy, shell molds and sparite, light tan   | 80        | BOX                    | RQD<br>24 78       |             |                   |         |
| -60.0  | 74.0  |        | GRAVEL, poorly-graded, dense, mostly fine-grained sand-sized quartz, some fine to coarse gravel-sized limestone, light gray | 60        | 24                     |                    | SPT Sampler | 14<br>16          |         |

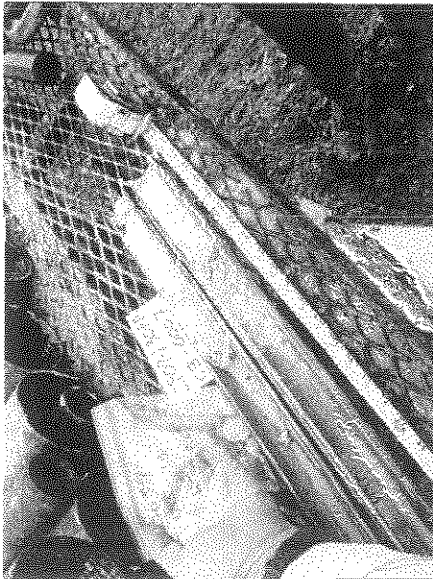
| DRILLING LOG (Cont. Sheet)                       |       |        |  | INSTALLATION<br>Jacksonville District                  |                  |                     | SHEET 5<br>OF 5 SHEETS   |                   |         |
|--|-------|--------|--|--|------------------|---------------------|--|-------------------|---------|
| PROJECT<br>L-30 Seepage Management Pilot Project |       |        |  | COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. Ft.) |                  | HORIZONTAL<br>NAD83 | VERTICAL<br>NAVD88   |                   |         |
| LOCATION COORDINATES<br>X = 825,886 Y = 524,095  |       |        |  | ELEVATION TOP OF BORING<br>14.0 Ft.                    |                  |                     |  |                   |         |
| ELEV.  | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS  | %<br>REC.  | BOX OR<br>SAMPLE | RQD<br>OR<br>UD     | REMARKS  | BLOWS/<br>0.1 FT. | N-VALUE |
|  |       |        | (GP)   | 60   | 24               |                     | -61.5 SPT Sampler  | 24                | 40      |
|  |       |        | From El. -61.5 to -63.0 Ft., dense, some fine to coarse gravel-sized limestone, light gray   | 60   | 26               |                     | SPT Sampler  | 8<br>15<br>24     | 39      |
|  |       |        | From El. -63.0 to -64.5 Ft., dense, some subangular to subrounded fine to coarse gravel-sized limestone, light gray  | 50   | 27               |                     | SPT Sampler  | 10<br>19<br>12    | 31      |
|  |       |        | From El. -64.5 to -66.0 Ft., medium dense, light gray  | 90   | 28               |                     | SPT Sampler  | 11<br>14<br>11    | 25      |
| -66.0  | 80.0  |        |  |  |                  |                     | -66.0  | 11                |         |
|  |       |        | GRAVEL, clayey, medium dense to dense, some subrounded fine-grained sand-sized quartz, gray (GC)   | 90   | 29               |                     | SPT Sampler  | 5<br>7<br>11      | 18      |
|  |       |        |  | 50   | 30               |                     | SPT Sampler  | 6<br>8<br>10      | 18      |
|  |       |        |  | 80   | 31               |                     | SPT Sampler  | 7<br>14<br>18     | 32      |
|  |       |        |  | 80   | 32               |                     | SPT Sampler  | 6<br>12<br>13     | 25      |
|  |       |        | From El. -72.0 to -75.0 Ft., dense to medium dense, some subrounded fine-grained sand-sized quartz, some shell, gray   | 60   | 33               |                     | SPT Sampler  | 8<br>15<br>18     | 33      |
|  |       |        |  |  | 34               |                     | SPT Sampler  | 5<br>7<br>9       | 16      |
| -75.0  | 89.0  |        |  |  |                  |                     | -75.0  |                   |         |
|  |       |        | NOTES:<br>1. Soils are field visually classified in accordance with the Unified Soils Classification System.<br>2. Additional Laboratory Testing<br>Specific Gravity |  |                  |                     | 140# hammer w/30" drop used with 2.0' split spoon (1-3/8" I.D. x 2" O.D.).<br>Abbreviations:<br>NR = Not Recorded. |                   |         |



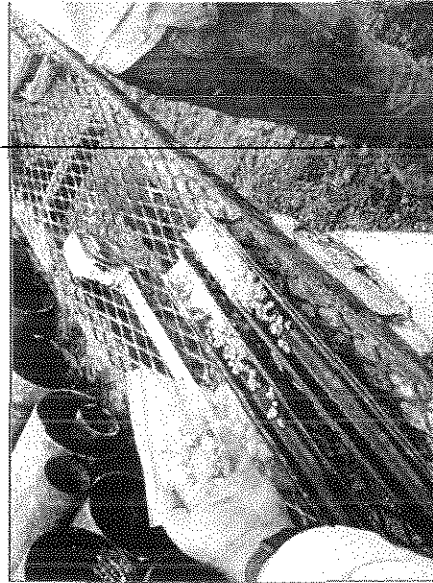
CP07-L30PP-CB-0007 Sample 1




CP07-L30PP-CB-0007 Sample 2

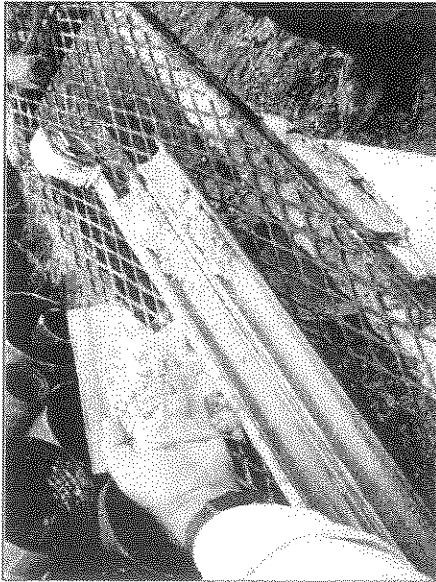


CP07-L30PP-CB-0007 Sample 3



CP07-L30PP-CB-0007 Sample 4

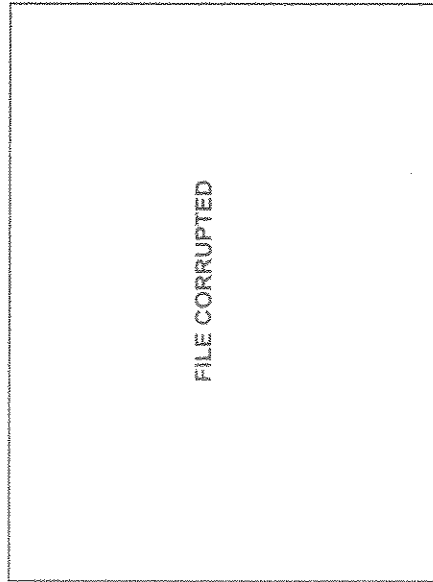
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|  |  | ENGINEERING, ENVIRONMENTAL<br>& CONSTRUCTION SERVICES |  |
| <b>COREBORING PHOTOGRAPHS</b>   |  |   |  |
| L30 Seepage Management Pilot Project<br>Miami-Dade County, Florida                  |  |   |  |
| WOLF/WPC Project No.:<br>WPC6208.00036  |  | Date:<br>12/03/08                                     |  |



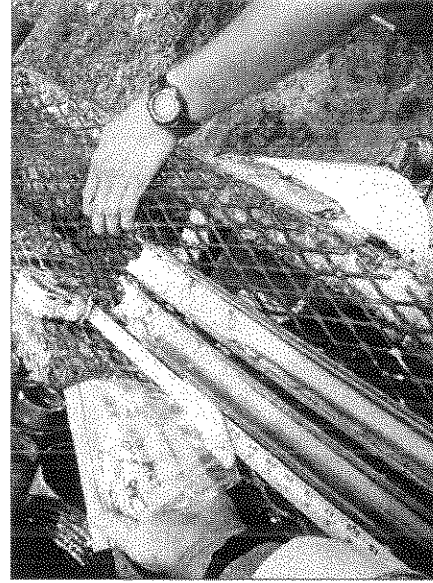
CP07-L30PP-CB-0007 Sample 5



CP07-L30PP-CB-0007 Sample 6

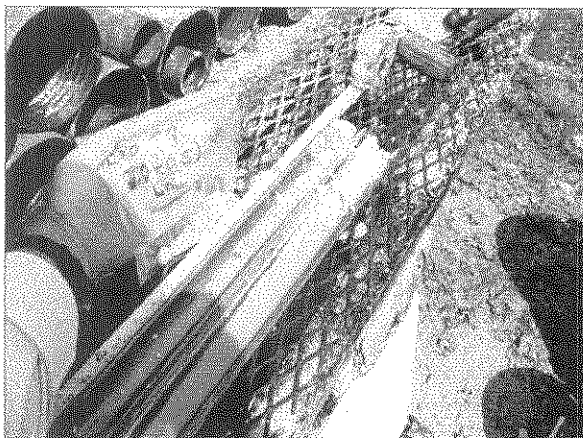


CP07-L30PP-CB-0007 Sample 7

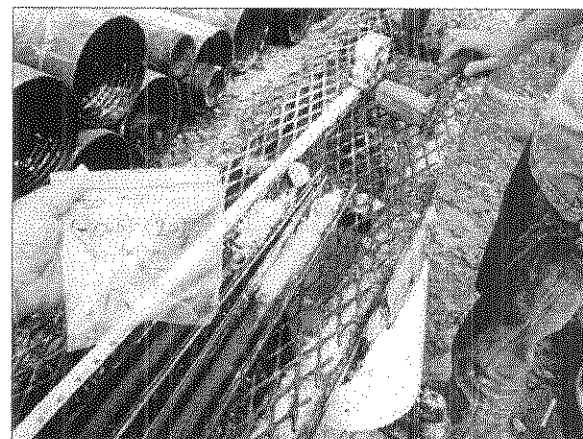


CP07-L30PP-CB-0007 Sample 8

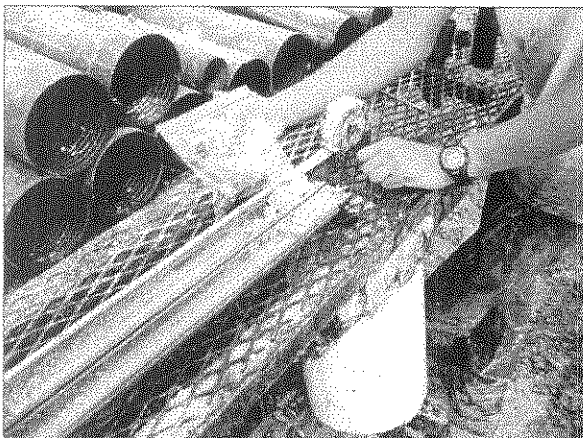
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| <b>WOLF</b><br>WPC<br>ENGINEERING, ENVIRONMENTAL<br>& CONSTRUCTION SERVICES                         |                          |
| <b>COREBORING PHOTOGRAPHS</b><br>L30 Seepage Management Pilot Project<br>Miami-Dade County, Florida |                          |
| <b>WOLF/WPC Project No.:</b><br>WPC6208.00036   | <b>Date:</b><br>12/03/08 |



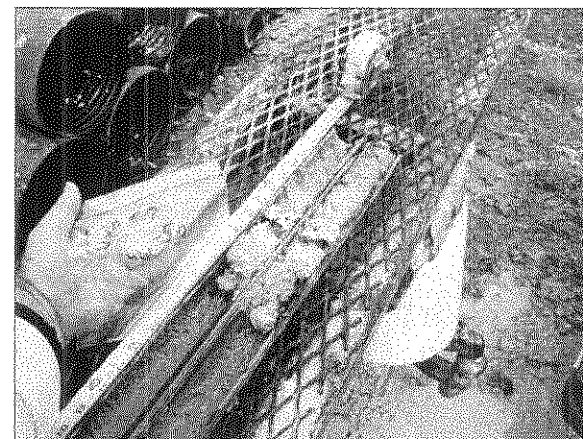
CP07-L30PP-CB-0007 Sample 9



CP07-L30PP-CB-0007 Sample 10



CP07-L30PP-CB-0007 Sample 11



CP07-L30PP-CB-0007 Sample 12

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**WPC** ENGINEERING, ENVIRONMENTAL  
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**COREBORING PHOTOGRAPHS**

L30 Seepage Management Pilot Project

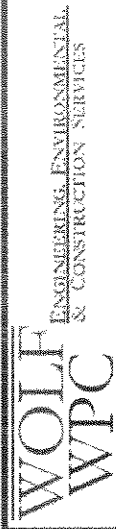
Miami-Dade County, Florida

WOLF/WPC Project No.:  
WPC6208.00036

Date:  
12/03/08

FILE S 13 THRU 35 ARE CORRUPTED

CP07-L30PP-CB-0007 Sample 13 THRU 35



**COREBORING PHOTOGRAPHS**

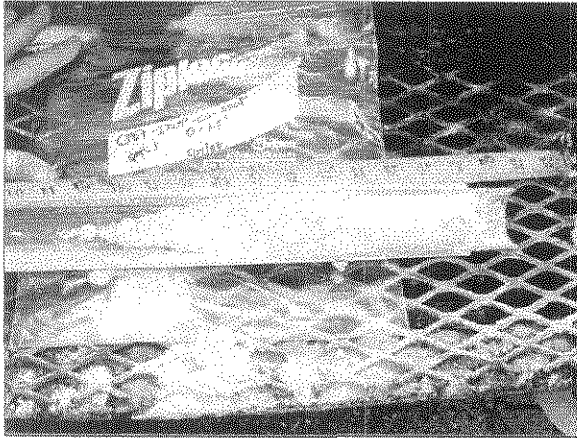
L30 Seepage Management Pilot Project

Miami-Dade County, Florida

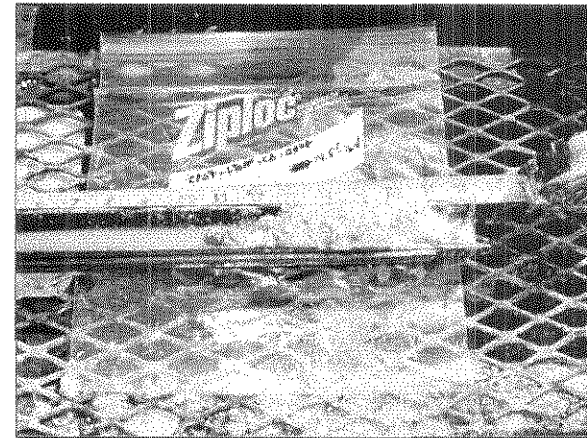
**WOLF/WPC Project No.:**  
WPC6208.00036

**Date:**  
12/03/08

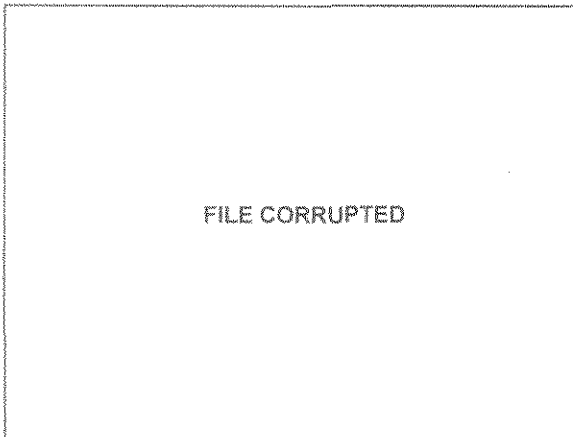




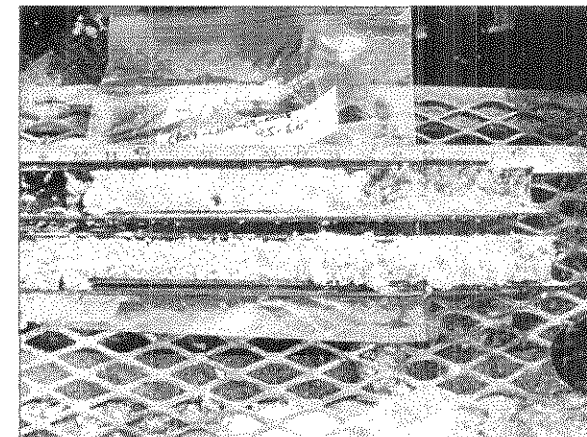
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CP07-L30PP-CB-0008 Sample 2

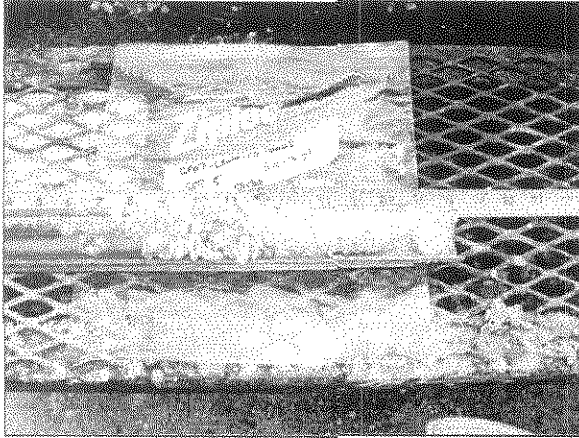


CP07-L30PP-CB-0008 Sample 3

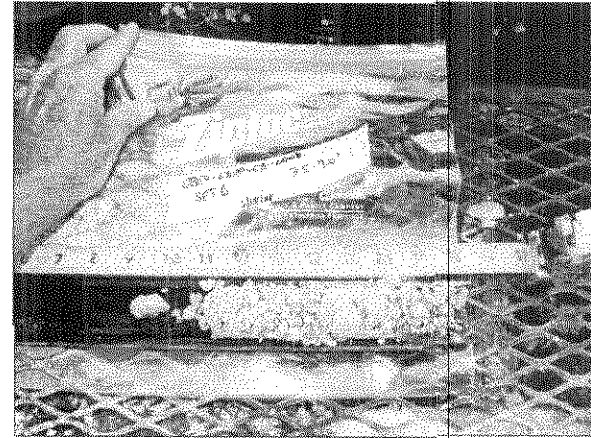


CP07-L30PP-CB-0008 Sample 4

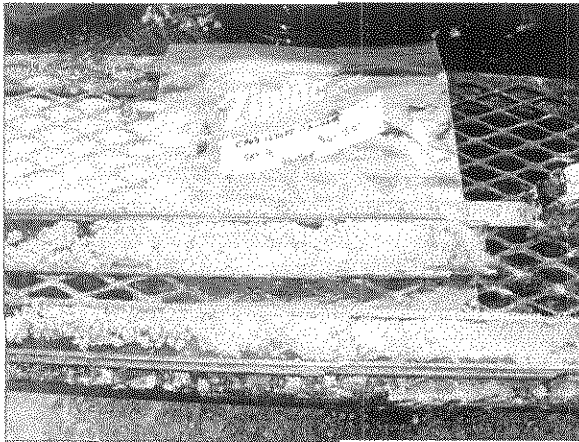
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| <b>WOLF</b><br><b>WPC</b>                     |                          | ENGINEERING, ENVIRONMENTAL<br>& CONSTRUCTION SERVICES |
| <b>COREBORING PHOTOGRAPHS</b>                 |                          |   |
| L30 Seepage Management Pilot Project          |                          |   |
| Miami-Dade County, Florida                    |                          |   |
| <b>WOLF/WPC Project No.:</b><br>WPC6208.00036 | <b>Date:</b><br>12/03/08 |   |



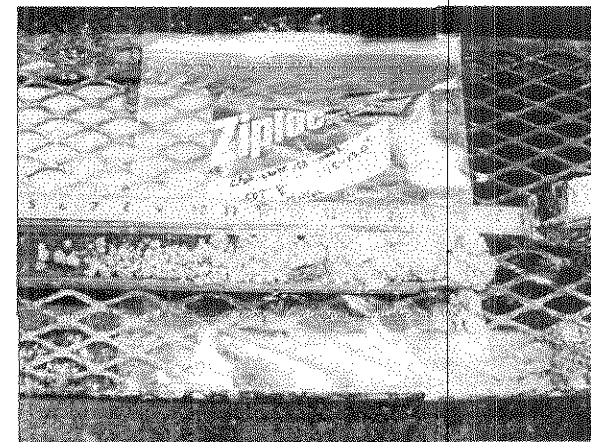
CP07-L30PP-CB-0008 Sample 5



CP07-L30PP-CB-0008 Sample 6



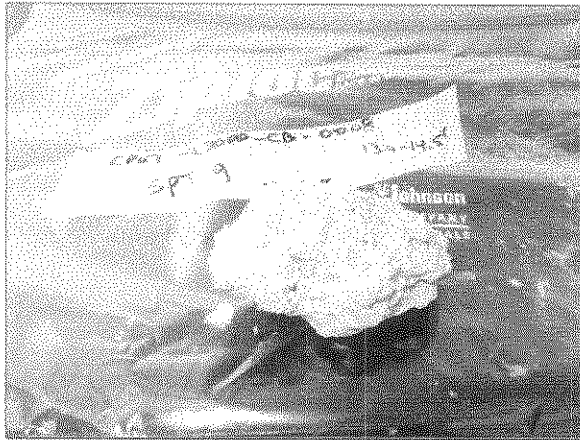
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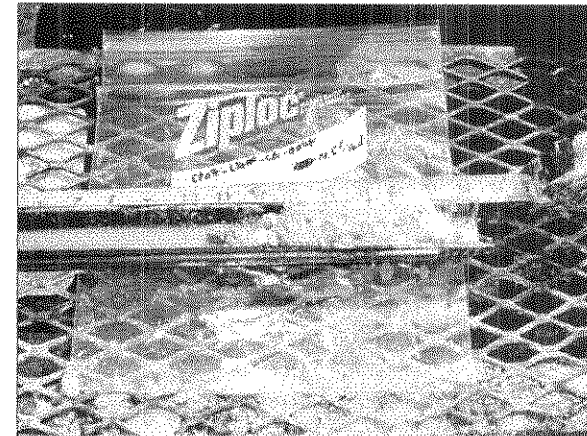
CP07-L30PP-CB-0008 Sample 8

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| <b>WOLF</b><br><b>WPC</b> | ENGINEERING, ENVIRONMENTAL<br>& CONSTRUCTION SERVICES  |
|                           | <b>COREBORING PHOTOGRAPHS</b><br>L30 Seepage Management Pilot Project<br>Miami-Dade County, Florida<br>WOLF/WPC Project No.:      Date:<br>WPC6208.00036      12/03/08 |





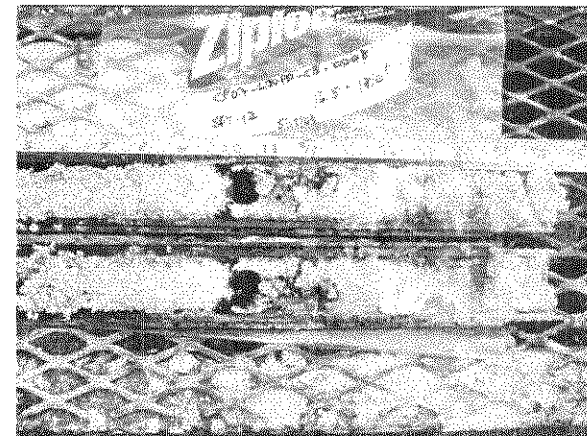
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CP07-L30PP-CB-0008 Sample 10



CP07-L30PP-CB-0008 Sample 11



CP07-L30PP-CB-0008 Sample 12

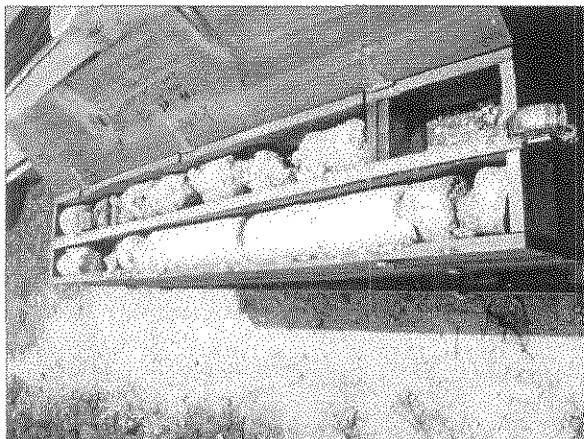
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| <b>WOLF</b><br><b>WPC</b>                     |                          | ENGINEERING, ENVIRONMENTAL<br>& CONSTRUCTION SERVICES |
| <b>COREBORING PHOTOGRAPHS</b>                 |                          |   |
| L30 Seepage Management Pilot Project          |                          |   |
| Miami-Dade County, Florida                    |                          |   |
| <b>WOLF/WPC Project No.:</b><br>WPC6208.00036 | <b>Date:</b><br>12/03/08 |   |

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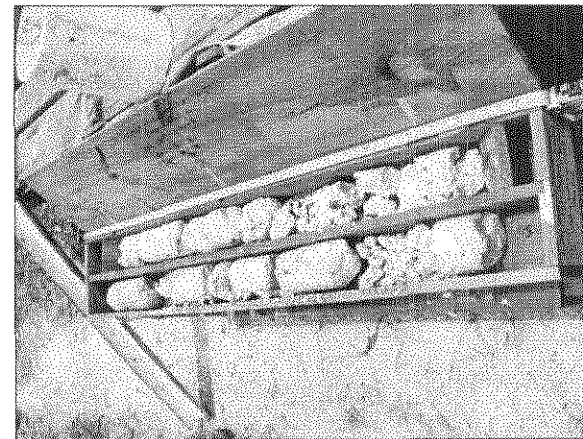
CP07-L30PP-CB-0008 Sample 13



CP07-L30PP-CB-0008 Sample 14 & 15



CP07-L30PP-CB-0008 Sample 16 & 17



CP07-L30PP-CB-0008 Sample 18 & 19

**WOLF**  
**WPC** ENGINEERING, ENVIRONMENTAL  
& CONSTRUCTION SERVICES

**COREBORING PHOTOGRAPHS**

L30 Seepage Management Pilot Project

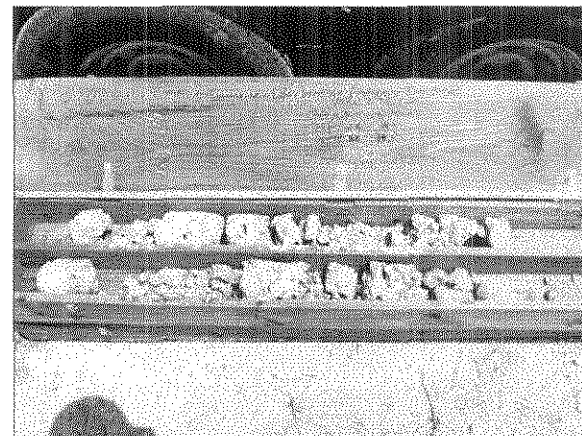
Miami-Dade County, Florida

WOLF/WPC Project No.:  
WPC6208.00036

Date:  
12/03/08



CP07-L30PP-CB-0008 Sample 20 & 21



CP07-L30PP-CB-0008 Sample 22 & 23

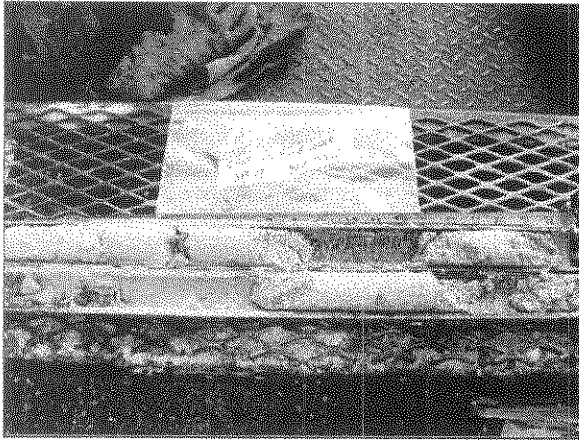


CP07-L30PP-CB-0008 Sample 24



CP07-L30PP-CB-0008 Sample 25

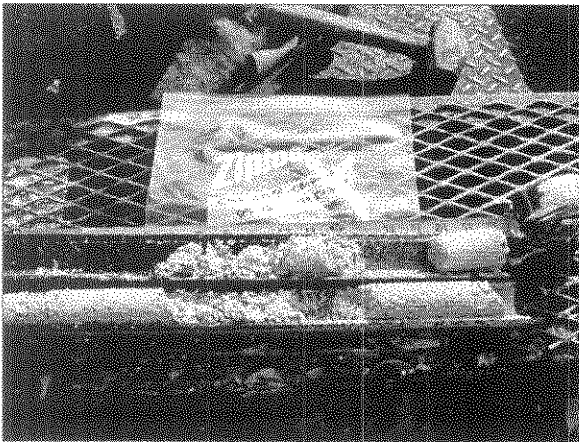
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| <b>WOLF</b><br><b>WPC</b>  |                          | ENGINEERING, ENVIRONMENTAL<br>& CONSTRUCTION SERVICES |
| <b>COREBORING PHOTOGRAPHS</b>                                      |                          |   |
| L30 Seepage Management Pilot Project<br>Miami-Dade County, Florida |                          |   |
| <b>WOLF/WPC Project No.:</b><br>WPC6208.00036                      | <b>Date:</b><br>12/03/08 |   |



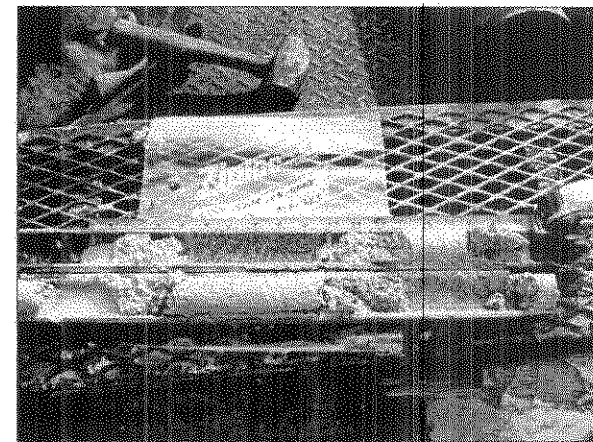
CP07-L30PP-CB-0008 Sample 26



CP07-L30PP-CB-0008 Sample 27



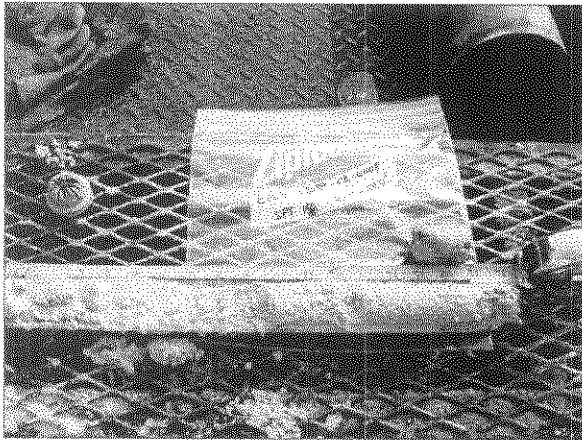
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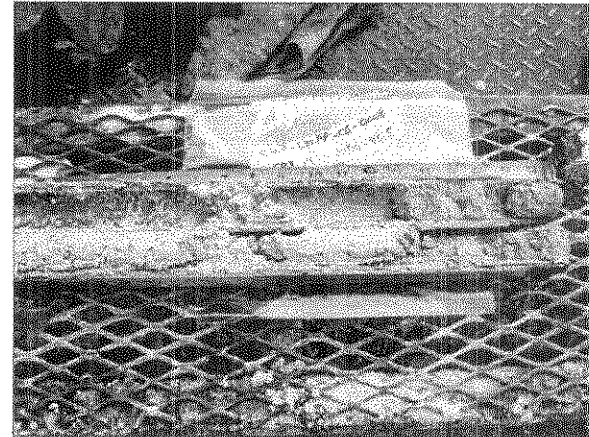
CP07-L30PP-CB-0007 Sample 29

|                           |  |
|---------------------------|--|
| <b>WOLF</b><br><b>WPC</b> | ENGINEERING, ENVIRONMENTAL<br>& CONSTRUCTION SERVICES  |
|                           | <b>COREBORING PHOTOGRAPHS</b><br>L30 Seepage Management Pilot Project<br>Miami-Dade County, Florida<br>WOLF/WPC Project No.: WPC6208.00036      Date: 12/03/08 |

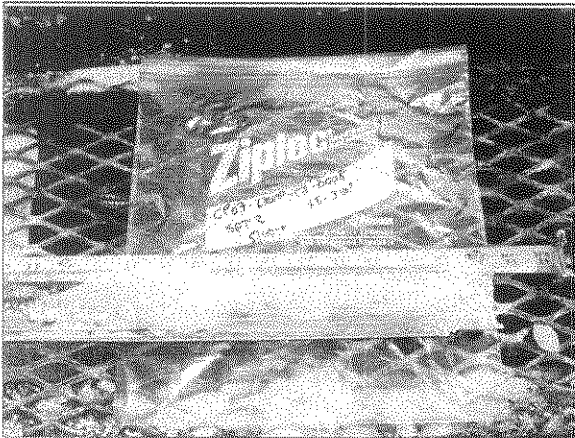




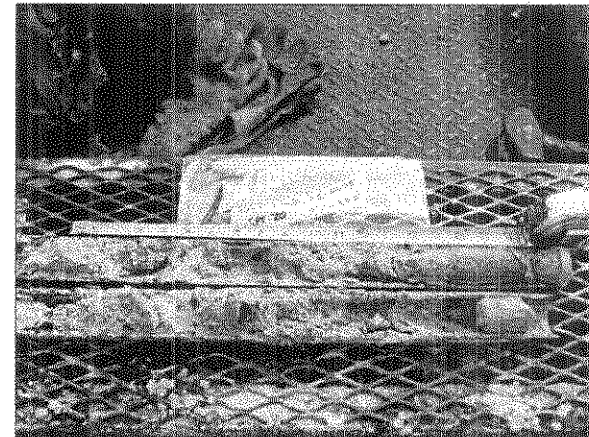
CP07-L30PP-CB-0008 Sample 30



CP07-L30PP-CB-0008 Sample 31



CP07-L30PP-CB-0008 Sample 32



CP07-L30PP-CB-0008 Sample 33

**WOLF**  
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& CONSTRUCTION SERVICES

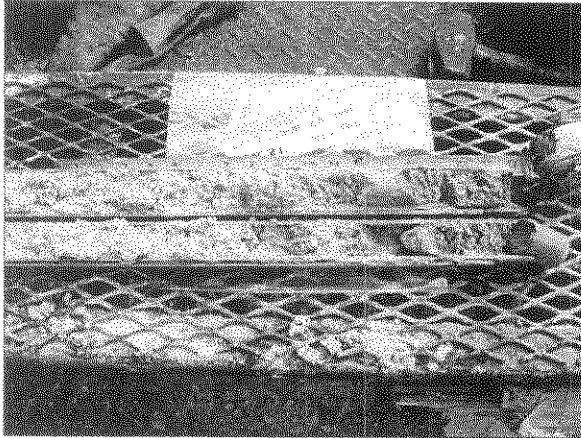
**COREBORING PHOTOGRAPHS**

L30 Seepage Management Pilot Project

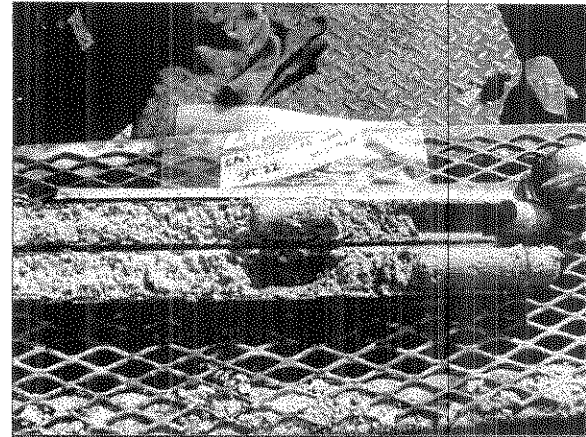
Miami-Dade County, Florida

WOLF/WPC Project No.:  
WPC6208.00036

Date:  
12/03/08



CP07-L30PP-CB-0008 Sample 34



CP07-L30PP-CB-0008 Sample 35

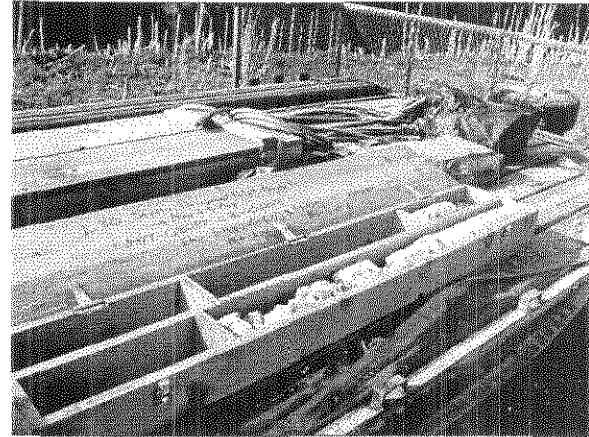
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| <b>WOLF</b><br><b>WPC</b>              | ENGINEERING, ENVIRONMENTAL<br>& CONSTRUCTION SERVICES |
| <b>COREBORING PHOTOGRAPHS</b>          |   |
| L30 Seepage Management Pilot Project   |   |
| Miami-Dade County, Florida             |   |
| WOLF/WPC Project No.:<br>WPC6208.00036 | Date:<br>12/03/08                                     |

FILES 1 THRU 12 CORRUPT

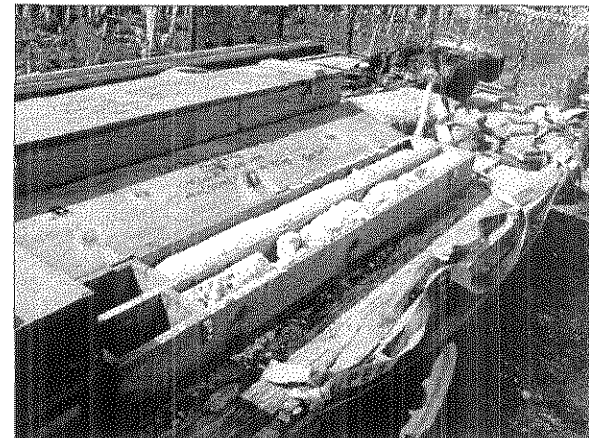
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CP07-L30PP-CB-0009 Sample 15 & 16



CP07-L30PP-CB-0009 Sample 13 & 14



CP07-L30PP-CB-0009 Sample 17 & 18

**WOLF**  
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& CONSTRUCTION SERVICES

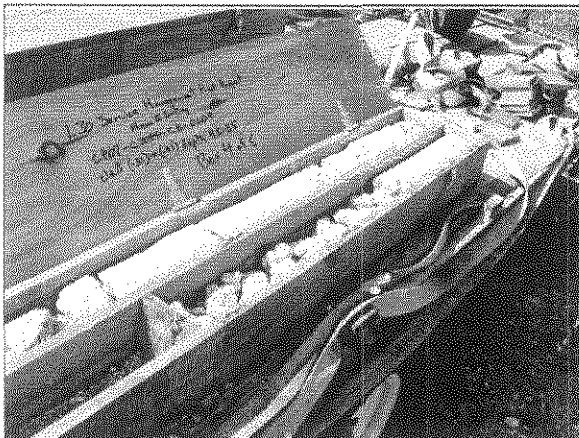
**COREBORING PHOTOGRAPHS**

L30 Seepage Management Pilot Project

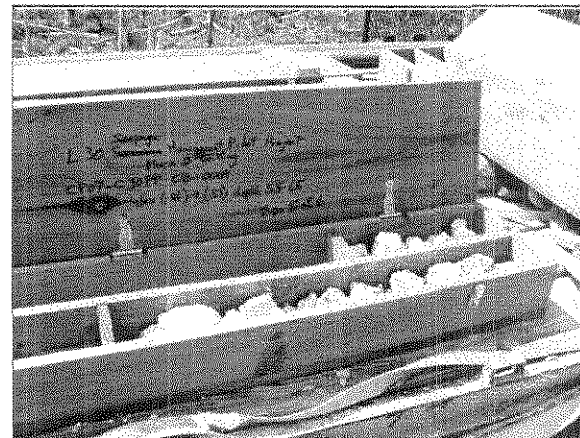
Miami-Dade County, Florida

WOLF/WPC Project No.:  
WPC6208.00036

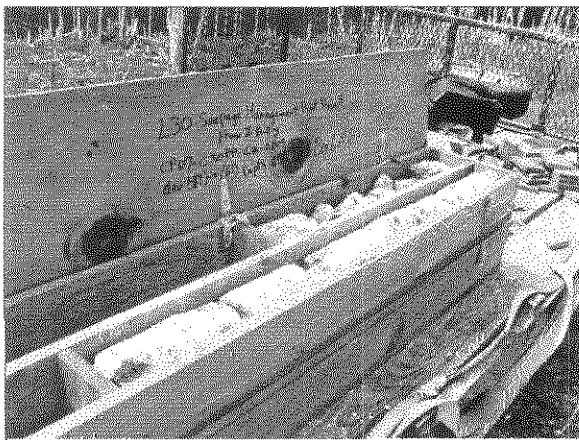
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12/03/08



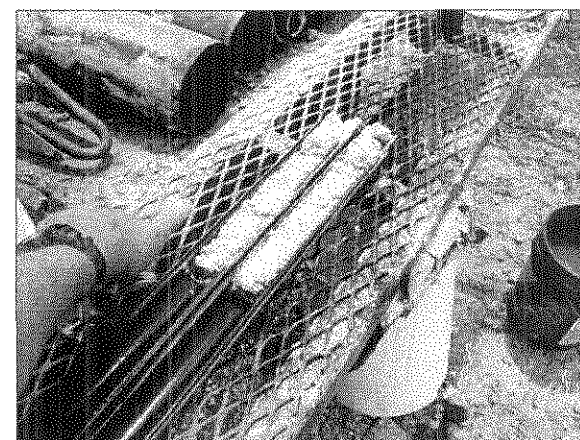
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CP07-L30PP-CB-0009 Sample 21 & 22



CP07-L30PP-CB-0009 Sample 23 & 24



CP07-L30PP-CB-0009 Sample 25

**WOLF**  
**WPC** ENGINEERING, ENVIRONMENTAL  
& CONSTRUCTION SERVICES

**COREBORING PHOTOGRAPHS**

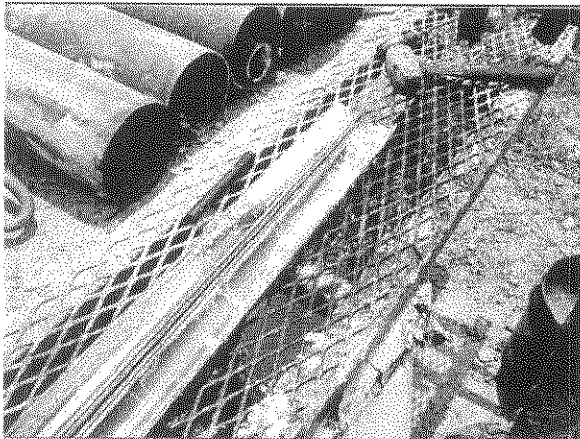
L30 Seepage Management Pilot Project

Miami-Dade County, Florida

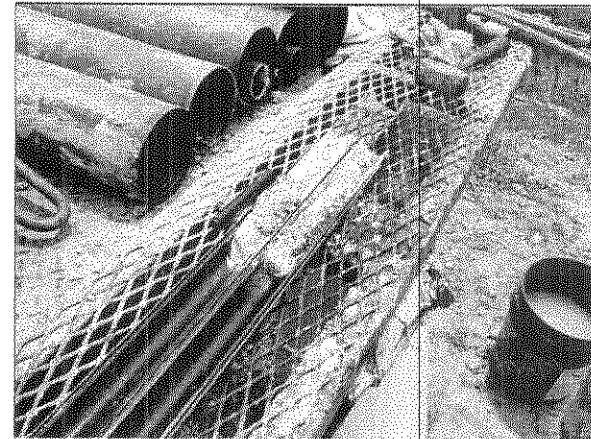
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12/03/08





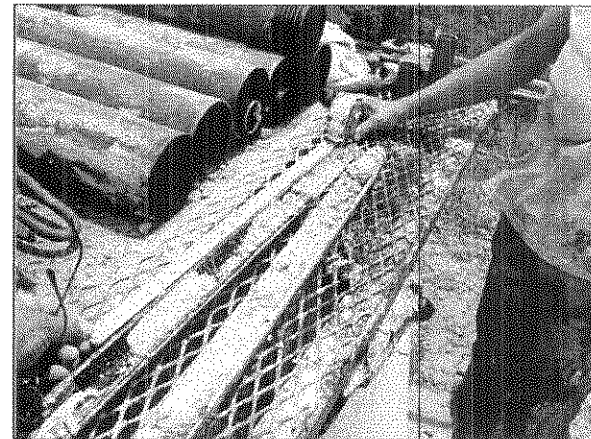
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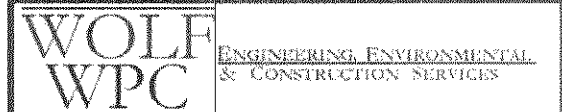
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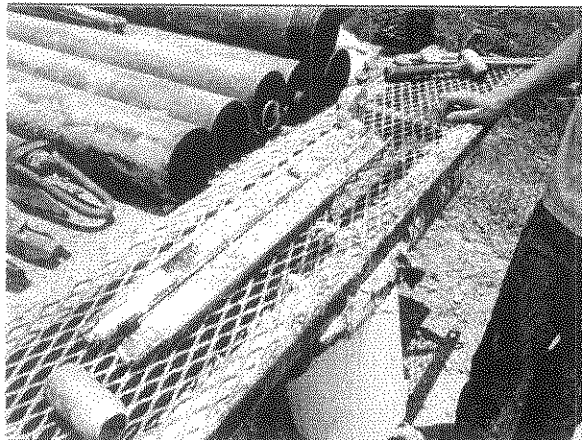
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**COREBORING PHOTOGRAPHS**

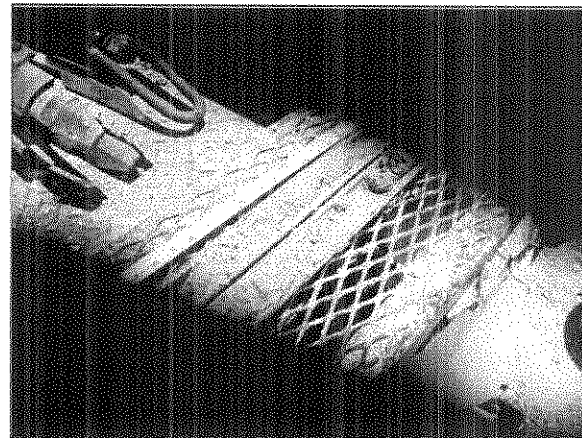
L30 Seepage Management Pilot Project

Miami-Dade County, Florida

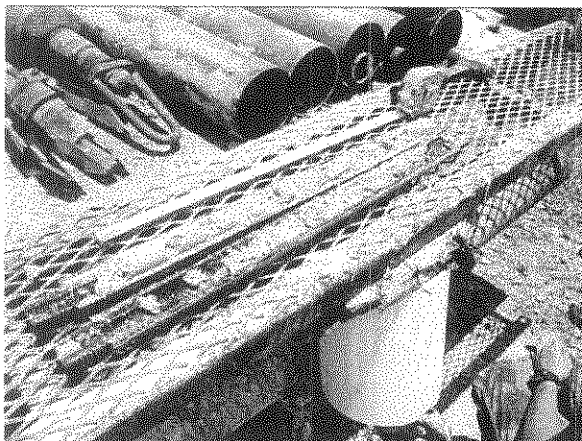
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WPC6208.00036Date:  
12/03/08



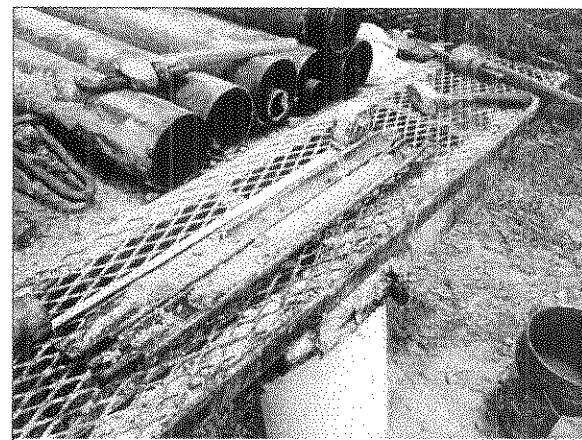
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CP07-L30PP-CB-0009 Sample 31



CP07-L30PP-CB-0009 Sample 32



CP07-L30PP-CB-0009 Sample 33

**COREBORING PHOTOGRAPHS**

L30 Seepage Management Pilot Project

Miami-Dade County, Florida

WOLF/WPC Project No.:  
WPC6208.00036Date:  
12/03/08



CP07-L30PP-CB-0009 Sample 34

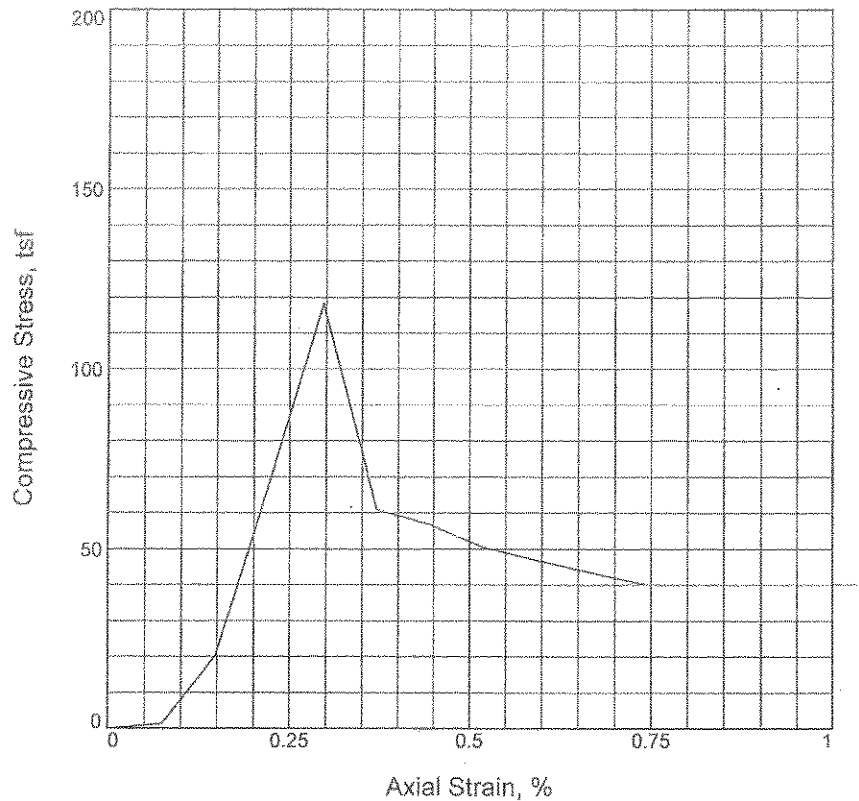
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| <b>WOLF<br/>WPC</b>                           | ENGINEERING, ENVIRONMENTAL<br>& CONSTRUCTION SERVICES |                          |
|   | <b>COREBORING PHOTOGRAPHS</b>                         |                          |
| L30 Seepage Management Pilot Project          |   |                          |
| Miami-Dade County, Florida                    |   |                          |
| <b>WOLF/WPC Project No.:</b><br>WPC6208.00036 |   | <b>Date:</b><br>12/03/08 |

## **APPENDIX C**

- **Summary of Laboratory Test Results**



## UNCONFINED COMPRESSION TEST



|                               |         |  |  |  |
|-------------------------------|---------|--|--|--|
| Sample No.                    | 1       |  |  |  |
| Unconfined strength, tsf      | 118.198 |  |  |  |
| Undrained shear strength, tsf | 59.099  |  |  |  |
| Failure strain, %             | 0.3     |  |  |  |
| Strain rate, in./min.         | 0.06    |  |  |  |
| Water content, %              | 5.2     |  |  |  |
| Wet density, pcf              | 142.8   |  |  |  |
| Dry density, pcf              | 135.8   |  |  |  |
| Saturation, %                 | 62.8    |  |  |  |
| Void ratio                    | 0.2179  |  |  |  |
| Specimen diameter, in.        | 3.91    |  |  |  |
| Specimen height, in.          | 6.75    |  |  |  |
| Height/diameter ratio         | 1.73    |  |  |  |

Description: Limerock Core, 10YR 7/1

|      |      |      |          |            |
|------|------|------|----------|------------|
| LL = | PL = | PI = | GS= 2.65 | Type: CORE |
|------|------|------|----------|------------|

Project No.: WPC6308.00036

Date Sampled:

Remarks:

Client: USACE

Project: L-30 Seepage Management Pilot program

Location: CP07-L30PP-CB-007

Depth: 42.0'-45.0'

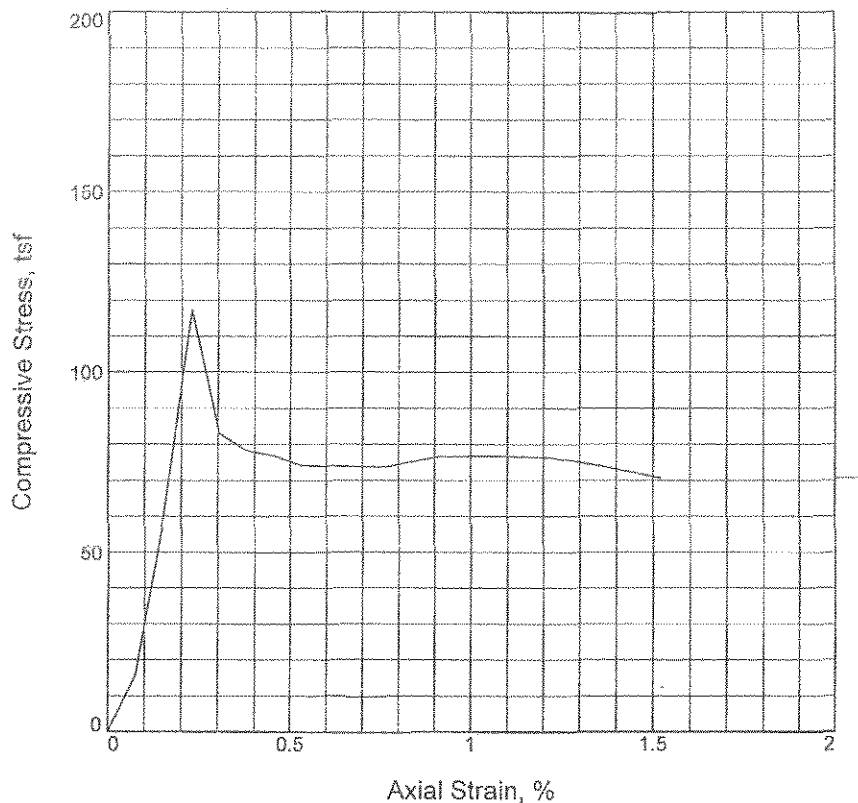
UNCONFINED COMPRESSION TEST

WPC

Figure \_\_\_\_\_

Tested By: C. Martin

# UNCONFINED COMPRESSION TEST



|                               |         |  |  |  |
|-------------------------------|---------|--|--|--|
| Sample No.                    | 1       |  |  |  |
| Unconfined strength, tsf      | 117.248 |  |  |  |
| Undrained shear strength, tsf | 58.624  |  |  |  |
| Failure strain, %             | 0.2     |  |  |  |
| Strain rate, in./min.         | 0.03    |  |  |  |
| Water content, %              | 2.7     |  |  |  |
| Wet density, pcf              | 153.4   |  |  |  |
| Dry density, pcf              | 149.3   |  |  |  |
| Saturation, %                 | 66.7    |  |  |  |
| Void ratio                    | 0.1079  |  |  |  |
| Specimen diameter, in.        | 3.94    |  |  |  |
| Specimen height, in.          | 6.58    |  |  |  |
| Height/diameter ratio         | 1.67    |  |  |  |

Description: Limerock Core, 10YR 7/1

LL =      PL =      PI =      GS= 2.65      Type: CORE

Project No.: WPC6308.00036

Date Sampled:

Remarks:

Client: USACE

Project: L-30 Seepage Management Pilot program

Location: CP07-L30PP-CB-008

Depth: 35.0'- 40.0'

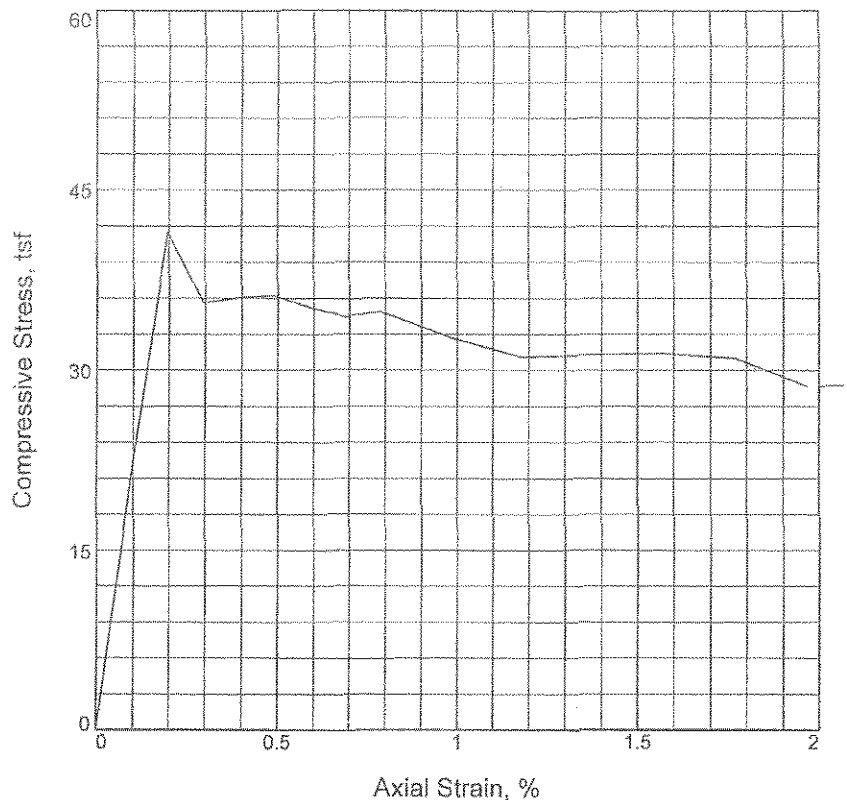
UNCONFINED COMPRESSION TEST

WPC

Figure \_\_\_\_\_

Tested By: C. Martin

## UNCONFINED COMPRESSION TEST



|                               |        |  |  |  |
|-------------------------------|--------|--|--|--|
| Sample No.                    | 1      |  |  |  |
| Unconfined strength, tsf      | 41.458 |  |  |  |
| Undrained shear strength, tsf | 20.729 |  |  |  |
| Failure strain, %             | 0.2    |  |  |  |
| Strain rate, in./min.         | 0.04   |  |  |  |
| Water content, %              | 7.2    |  |  |  |
| Wet density, pcf              | 148.0  |  |  |  |
| Dry density, pcf              | 138.1  |  |  |  |
| Saturation, %                 | 96.3   |  |  |  |
| Void ratio                    | 0.1983 |  |  |  |
| Specimen diameter, in.        | 3.95   |  |  |  |
| Specimen height, in.          | 5.08   |  |  |  |
| Height/diameter ratio         | 1.29   |  |  |  |

**Description:** Limerock Core, 10YR 7/1

|      |      |      |          |            |
|------|------|------|----------|------------|
| LL = | PL = | PI = | GS= 2.65 | Type: CORE |
|------|------|------|----------|------------|

Project No.: WPC6308.00036

Date Sampled:

Remarks:

**Client:** USACE

**Project:** L-30 Seepage Management Pilot program

**Location:** CP07-L30PP-CB-009

**Depth:** 38.0'- 40.0'

UNCONFINED COMPRESSION TEST

WPC

Figure \_\_\_\_\_

Tested By: C. Martin \_\_\_\_\_



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SPECIALIZING IN SOILS  
EXPLORATION, PHYSICAL  
TESTING, ENGINEERING AND  
NDT EXAMINATION SERVICES



**CHALLENGE**  
**ENGINEERING & TESTING, INC.**

P. O. Box 91537  
4234 HALLS MILL ROAD  
MOBILE, ALABAMA 36691  
PHONE: (251) 666-1435  
FAX: (251) 666-1438  
EMAIL: CHALLENGETESTING@AOL.COM

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**FINAL REPORT**  
**L-30 SEEPAGE MANAGEMENT PILOT**  
**PROJECT**  
**WATER CONSERVATION AREA 3B**  
**MIAMI-DADE COUNTY, FLORIDA**

**Contract # W912EP-05-D-0010**  
**Delivery Order # 0003**  
**Challenge Engineering & Testing, Inc.**

**Prepared For:**  
**U.S. Army Corps of Engineers – Jacksonville District**  
**Geotechnical Branch**  
**701 San Marco Boulevard**  
**Jacksonville, Florida 32207**

**Submitted By:**  
**Challenge Engineering & Testing, Inc.**  
**4234 Halls Mill Road**  
**Mobile, Alabama 36691**

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## PURPOSE OF PROJECT

The U.S. Army Corps of Engineers is interested in determining the type, nature, and characteristics of lithological units that include the Biscayne Aquifer and the extent and conditions of the various materials as they exist to the depths at each of the locations specified.

The purpose of the L-30 Seepage Management Pilot Project (SMPP) is to address seepage management issues along the L-30 Canal related to the onset of other Comprehensive Everglades Restoration Plan (CERP) projects within the next five years.

The Pilot project is being conducted to provide information to determine the appropriate amount of wet season groundwater flow to return to the Everglades National Park (ENP) while minimizing potential impacts to the Miami-Dade West Well field and freshwater flows to Biscayne Bay.

This project is located west of Miami, Florida, northwest of the Tamiami Trail (US41) and Krome Avenue (Route 997). Work was performed along the top to the L-30 Canal Levee which runs mainly north-south and makes a 45 degree southwesterly departure from Krome Avenue toward the Tamiami Trail, commonly known as the "L-30 Triangle."

Challenge Engineering & Testing, Inc. of Mobile, Alabama was requested to assist the Jacksonville District of The U.S. Army Corps of Engineers on this contract.

## SCOPE OF WORK

The scope of work consisted of performing in the upland (landside along top of L-30 levee) and in the freshwater wetland environment of the Water Conservation Area 3B the following:

- Core Drilling
- Wireline Core & Splitspoon Sampling
- Installation of Groundwater Monitoring Wells

Authorization to proceed with the requested tasks was issued on September 18th, 2006, Contract #W912EP-05-D-0010 – Delivery Order #0003 by the U.S. Army Corps of Engineers – Jacksonville District.

Field work was requested to be completed by November 19, 2006 for this assignment order.

(2)

# PROCEDURES AND PROJECT SPECIFICATIONS

This report presents the procedures as followed for the borehole location, soil sampling and the classification of each respective soil sample in conjunction with special notes as recorded regarding conditions encountered in the field.

U.S. Army Corps of Engineer Standard Boring Log Forms 1836 are completed for each core boring performed in the designated location as generated with the Geotechnical Integrator "gINT" Software Program and script/library files as furnished by the Jacksonville District.

Drilling techniques and equipment were in general accordance with the prescribed technical provisions as stated in the Department of the Army Engineering Manual EM-1110-2-1907, "Soil Sampling" Publication.

## FIELD WORK PERFORMED

### PHASE I: TOP OF L-30 LEVEE LANDSIDE CORE BORINGS / WELL INSTALLATION

The landside well drilling phase of work on this project consisted of performing numerous tasks along the top of the L-30 Levee in designated test locations.

Boreholes were located utilizing the x-y coordinates as furnished by the Jacksonville District of the U.S. Army Corps of Engineers and converted by Corpscon to latitude/longitude for GPS location.

Three (3) borings were designated to be located along the top of the levee in the center of the roadway.

In each of the locations the following tasks were performed:

- Large diameter (10") roller bit was used to drill through the levee to top of rock
- PVC (8") surface casing set to top of rock
- Wireline rock coring was commenced with a five foot 4" x 5 1/2" core barrel to the base of the rock formation with fresh water
- Boreholes were reamed with a seven and one-half inch (7.5") bit
- Boreholes developed for a period of three (3) hours with compressed air
- U.S. Geological Survey was notified of field progress
- Boreholes were allowed to remain for a minimum of 72 hours
- Borehole logging was performed by U.S.G.S.
- After approximately 7 days, drillcrew returned to perform continuous splitspoon sampling for an additional 30 feet
- Boreholes were backfilled with gravel and crushed limestone

(3)

The rig used on this project was a CME-55 four (4) wheel drive truck mounted hydraulic drill unit equipped with a standard manual 140 lb. splitspoon drive hammer and a Moyno reciprocating cavity unit pump.

Groundwater monitoring wells were installed approximately 10 ft. from each of the large diameter boreholes along the backside (south-canal) top of levee. The construction consisted of two (2) inch diameter schedule 40 Johnson threaded joint "Tri-Lock" PVC installed with two (2) feet of 0.060" slotted screen.

Pea gravel backfill was used to fill the annulus around the screen.

A seal of 3/8" bentonite pellets was placed above the pea gravel. The remaining borehole annulus was backfilled with crushed limestone and gravel to the surface.

Flush mount security covers were completed encased in a three (3) foot by three (3) foot concrete pad. Locking top caps were placed on the well pipe.

The base of the Fort Thompson Formation was noted for each of the borings and reported in the below table. Splitspoon sampling was conducted for thirty (30) feet in the Pinecrest Sands below the Ft. Thompson Formation.

The computed horizontal coordinates for each of the borings to Florida East – NAD 83 State Plane Coordinates and vertical elevations to NAVD 1988 are reported as follows:

#### **BORING/WELL DRILLING TEST LOCATIONS**

| <b>Boring/Well<br/>Number</b> | <b>NAD 1983 Florida East<br/>Northing</b> | <b>NAD 1983 Florida East<br/>Easting</b> | <b>Elevation<br/>(Ft.)</b> | <b>Base of<br/>Ft. Thompson</b> |
|-------------------------------|---|--|----------------------------|---------------------------------|
| CP06-L30PP-CB-0001            | 524279                                    | 826073                                   | 17.27                      | - 57.7                          |
| CP06-L30PP-CB-0002            | 522044                                    | 823753                                   | 17.49                      | - 62.5                          |
| CP06-L30PP-CB-0003            | 519743                                    | 821358                                   | 17.19                      | - 57.1                          |
| <b>Top of Casing</b>          |   |  |                            |                                 |
| CP06-L30PP-MW-0001            | 524270                                    | 826074                                   | 17.12                      |                                 |
| CP06-L30PP-MW-0002            | 522036                                    | 823753                                   | 17.10                      |                                 |
| CP06-L30PP-MW-0003            | 519734                                    | 821356                                   | 16.87                      |                                 |

#### **PHASE II: WATER CONSERVATION AREA 3B FRESHWATER WETLAND WELLS**

Two (2) locations in the WCA3B were designated for monitoring wells and platforms to be constructed

Each site was drilled to termination depth with an amphibious track mounted drill setup. The wells were constructed and developed in the same manner as described above for the upland L-30 levee.

Surface casing consisted of installing six (6) inch schedule 80 PVC casing around the well and strapped to a four legged 2" galvanized steel pipe platform with a 48" treated wooden work deck.

## **WELL DRILLING TEST LOCATIONS**

| Boring/Well<br>Number | NAD 1983 Florida East<br>Northing | East<br>Easting | Top Of<br>Casing |
|-----------------------|-----------------------------------|-----------------|------------------|
| CP06-L30PP-MW-0004    | 526589                            | 821601          | 12.00            |
| CP06-L30PP-MW-0005    | 528482                            | 824038          | 13.55            |

## **WELL DEVELOPMENT**

The large diameter seven and one-half (7.5) inch boreholes were developed by insertion of tremmie pipe to the base of the reamed boreholes and using compressed air as supplied by a portable 185 CFM compressor to lift and blow out water and debris from boreholes. Each was developed for a period of a minimum of three (3) hours as the well was noted to produce "clear water".

Air bubbles were noted to be present rising to the surface waters on both sides of the levee for a distance of up to 105 feet from the well for a period of time of at least 20 minutes following development.

Each of the two (2) inch permanent groundwater monitoring wells was developed by pumping and surging until "clear" water was produced.

As per project specifications, an inventory of core boxes as prepared in the gINT format was submitted to Mrs. Karen Pitchford. The samples were placed in labeled wooden core boxes and delivered to the Corps of Engineer Warehouse on Talleyrand Avenue in Jacksonville, Florida on November 8, 2006. The core boxes were verified received by Mr. Mark Whitson and Dr. June Mirecki of the U.S. Army Corps of Engineers.

## **REPORT SUBMITTALS**

The field boring logs, visual classifications and test results were all entered into the Geotechnical Integrator (gINT) software format as designed by the Jacksonville District which is presented as part of this report.

Digital project photographs were taken throughout the duration of the field work to document progress. Some the photographs are found attached as part of this report to include completed well installations.

Monitoring well construction diagrams are completed for each well.

## **FIELD EXPLORATION SUMMARY CONCLUSION**

Coordination of field activities was conducted with Mr. Keith Price, Miami Field Office of the South Florida Water Management District during the term of this project.

During the field work on this project, coordination and updates were provided to Mr. Kevin Cunningham of the U.S. Geological Survey and U.S. Army Corps of Engineers Project Geologist Dr. June Mirecki of the Jacksonville District.

A special work permit was secured by Challenge Engineering Testing, Inc, through the Florida Fish and Wildlife Conservation Commission to work in the area due to excessive high water and public usage restrictions.

Challenge Engineering & Testing, Inc. has made every attempt to conduct this field project according to the project specifications and at the direction & satisfaction of all parties involved.

## **REPORT INVESTIGATION LIMITATIONS**

The core borings, installation of the groundwater monitoring wells, analyses and recommendations submitted in this preliminary report are based on the data obtained from the field explorations performed at the locations depicted on the site plan. These locations were chosen by the U.S. Army Corps of Engineers, Jacksonville District. The area explored is limited to the depth and diameter of the core borings. This report does not reflect any variations which may occur adjacent to or between the core borings. The nature and extent of the variations between the borings may not become evident until during future excavations or construction in the area.

This report is based on relatively shallow explorations and a scope of work determined solely by the Corps of Engineers. This report does not include an evaluation of the environmental (ecological or hazardous/toxic material related) condition of the site and subsurface.



This report has been prepared for the exclusive use of the U.S. Army Corps of Engineers in accordance with generally accepted soil and foundation engineering practices.

It has been our pleasure for Challenge Engineering & Testing, Inc. to provide the U.S. Army Corps of Engineers – Jacksonville District our geotechnical engineering testing services on this project along the L-30 Levee & in the Water Conservation Area 3B.

I trust that you will find this submittal to be in general conformance with the project guidelines and specifications.

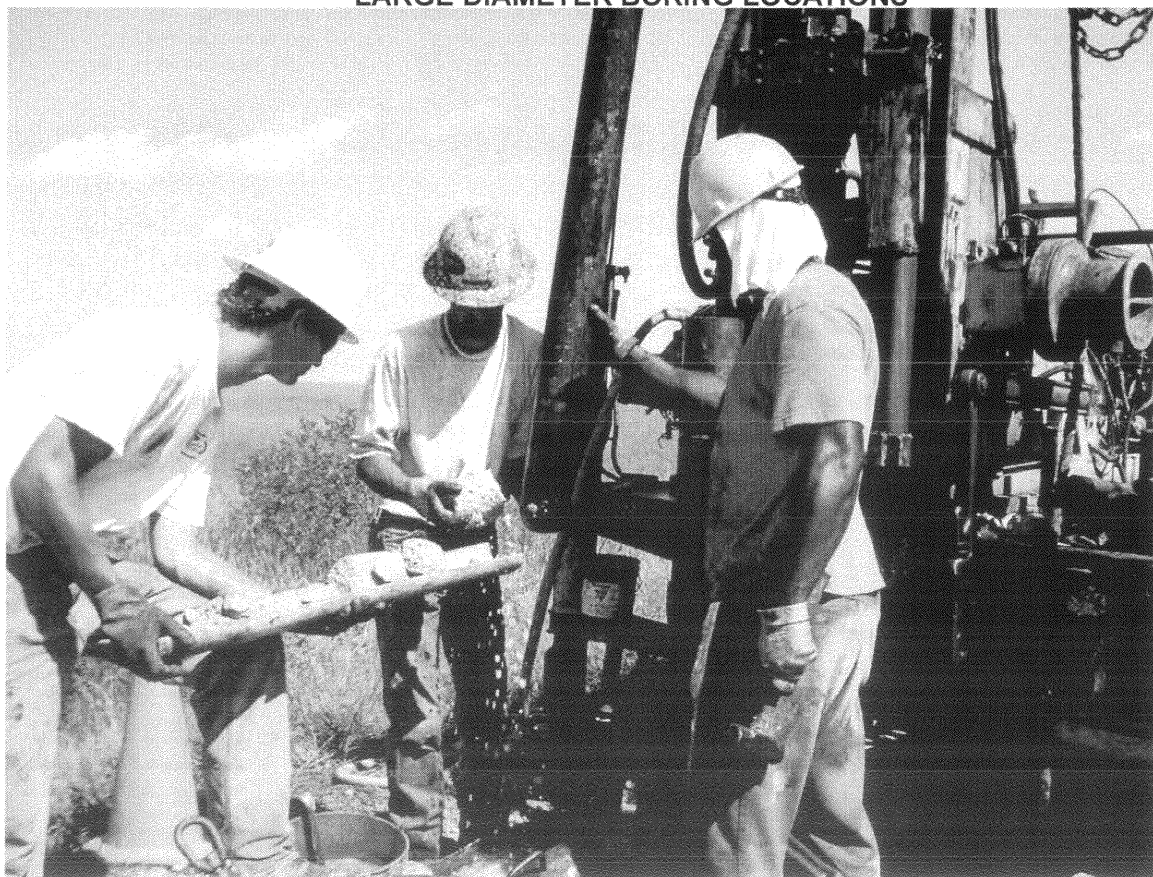
Respectfully Submitted,  
**Challenge Engineering & Testing, Inc.**

V. J. Thompson III, P.E.  
Florida Registration # 37610

# **REFERENCE PROJECT PHOTOGRAPHS**



**8" SURFACE PVC CASING WAS SET AT EACH OF THE  
LARGE DIAMETER BORING LOCATIONS**



**4" WIRELINE CORING SYSTEM USED TO SAMPLE TO ROCK**



**7.5" OPEN BOREHOLES BEING AIR LIFTED WITH COMPRESSOR FOR 3 HOURS EACH PRIOR TO BEING LOGGED BY THE U.S.G.S.**



**AIR BUBBLES WERE NOTED TO BE PRESENT ON BOTH SIDES OF THE LEVEE UP TO 105 FT. FROM BOREHOLES 10 MINUTES AFTER COMPRESSOR SHUTDOWN**

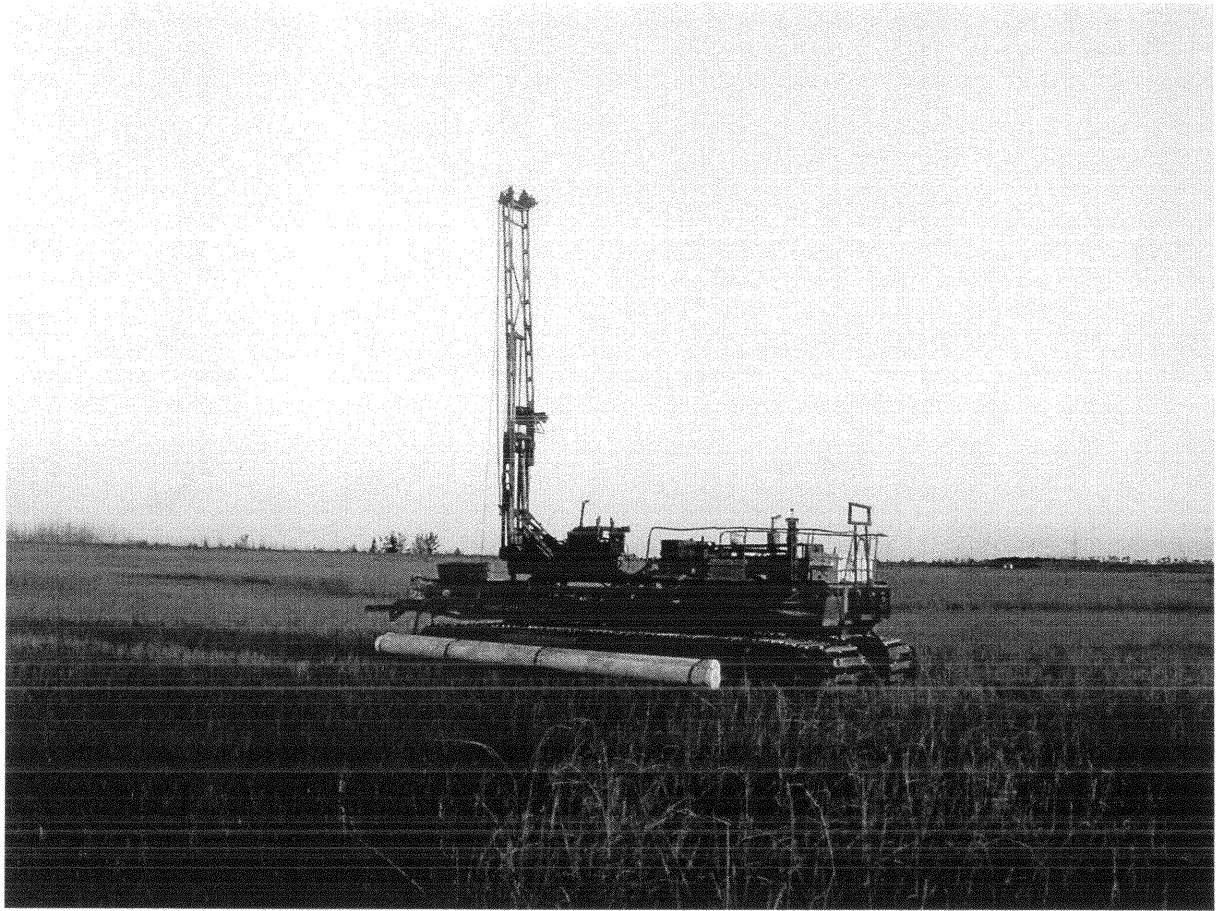




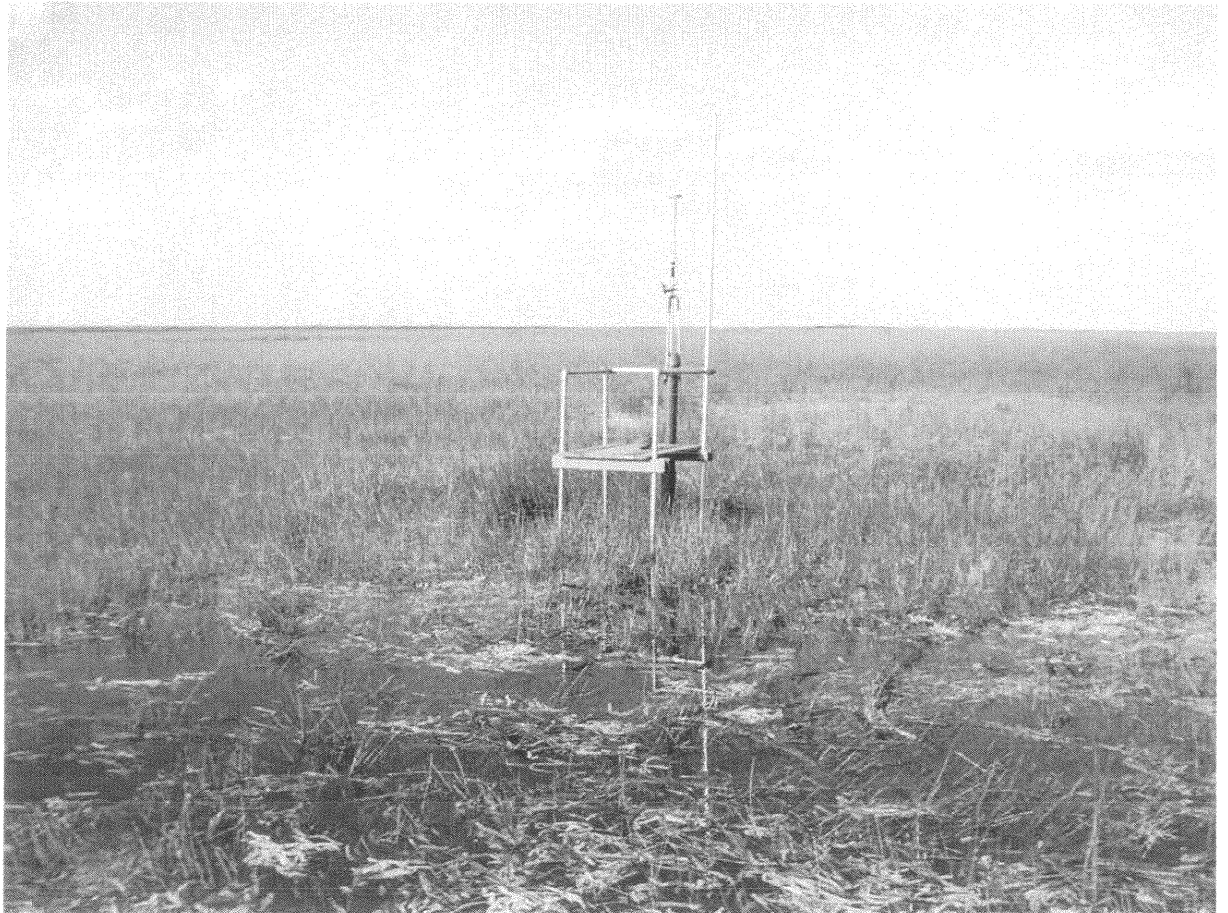
**FLUSH MOUNT MONITORING WELL PADS CONSTRUCTED ON TOP OF L-30.  
GPS POSITIONING CONDUCTED ON WELL CASING**



**COMPLETED FLUSH MOUNT WELL PAD ON SOUTHSIDE OF L-30  
WITH BOLTDOWN MANHOLE COVER**



**ATV SWAMP MOUNTED DRILL BUGGY ON-SITE**



**MONITORING WELL PLATFORM**

# **BORING LOCATION MAP**





LOCATION OF CORE BORINGS AND MONITORING WELLS  
L-30 SEEPAGE MANAGEMENT PILOT PROJECT  
DADE COUNTY, FLORIDA

**SOILS TEST CORE BORING  
NUMBER  
“CP06-L30PP-CB-0002”**

**Miami-Dade County, Florida**

| DRILLING LOG  |       | DIVISION<br>South Atlantic                      |                             | INSTALLATION<br>Jacksonville District                            |               | SHEET 1<br>OF 7 SHEETS  |  |               |         |
|---|-------|---|-----------------------------|--|---------------|---|--|---------------|---------|
| 1. PROJECT<br>L-30 Seepage Management Pilot Project<br>Top Of Levee L-30 (Center of Roadway)                |       |   |                             | 9. SIZE AND TYPE OF BIT See Remarks                              |               |   |  |               |         |
| 2. BORING DESIGNATION<br>CP06-L30PP-CB-0002   |       | LOCATION COORDINATES<br>X = 823,753 Y = 522,044 |                             | 10. COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. Ft.)       |               | HORIZONTAL<br>NAD83<br>VERTICAL<br>NAVD88   |  |               |         |
| 3. DRILLING AGENCY<br>Challenge Engineering & Testing, Inc.   |       | CONTRACTOR FILE NO.<br>2006D30                  |                             | 11. MANUFACTURER'S DESIGNATION OF DRILL<br>CME 55 Truckrig       |               | <input type="checkbox"/> AUTO HAMMER<br><input checked="" type="checkbox"/> MANUAL HAMMER |  |               |         |
| 4. NAME OF DRILLER<br>Adam Benson   |       |   |                             | 12. TOTAL SAMPLES<br>33  |               | DISTURBED<br>0<br>UNDISTURBED (UD)  |  |               |         |
| 5. DIRECTION OF BORING<br><input checked="" type="checkbox"/> VERTICAL<br><input type="checkbox"/> INCLINED |       | DEG. FROM VERTICAL                              |                             | 13. TOTAL NUMBER CORE BOXES<br>4                                 |               |   |  |               |         |
|   |       | BEARING   |                             | 14. ELEVATION GROUND WATER<br>5.0 Ft.                            |               |   |  |               |         |
| 6. THICKNESS OF OVERBURDEN<br>N/A   |       |   |                             | 15. DATE BORING<br>10-06-06                                      |               | STARTED<br>10-17-06<br>COMPLETED  |  |               |         |
| 7. DEPTH DRILLED INTO ROCK<br>N/A   |       |   |                             | 16. ELEVATION TOP OF BORING<br>17.5 Ft.                          |               |   |  |               |         |
| 8. TOTAL DEPTH OF BORING<br>109.0 Ft.   |       |   |                             | 17. TOTAL RECOVERY FOR BORING<br>65 %                            |               |   |  |               |         |
|   |       |   |                             | 18. SIGNATURE AND TITLE OF INSPECTOR<br>Bob Momberger, Geologist |               |   |  |               |         |
| ELEV.   | DEPTH | LEGEND  | CLASSIFICATION OF MATERIALS | % REC.   | BOX OR SAMPLE | RCD OR UD   | REMARKS                                  | BLOWS/0.5 FT. | N-VALUE |
| 17.5  | 0.0   |   | L-30 Levee Fill Material    |  |               |   | 17.5                                     |               |         |
|   |       |   |                             |  |               |   | Advanced Boring<br>w/ tricone roller bit |               |         |

| DRILLING LOG (Cont. Sheet)                       |       |        |   | INSTALLATION<br>Jacksonville District                  |               |                     | SHEET 2<br>OF 7 SHEETS  |                   |         |
|--|-------|--------|---|--|---------------|---------------------|---|-------------------|---------|
| PROJECT<br>L-30 Seepage Management Pilot Project |       |        |   | COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. Ft.) |               | HORIZONTAL<br>NAD83 | VERTICAL<br>NAVD88  |                   |         |
| LOCATION COORDINATES<br>X = 823,753 Y = 522,044  |       |        |   | ELEVATION TOP OF BORING<br>17.5 Ft.                    |               |                     |   |                   |         |
| ELEV.  | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS   | % REC.   | BOX OR SAMPLE | RQD OR UD           | REMARKS   | BLOWS/<br>0.5 FT. | N-VALUE |
| 0.2  | 17.3  |        |   |  |               |                     | Advanced Boring<br>w/ tricone roller bit  |                   |         |
| -2.5   | 20.0  |        | LIMESTONE, oolitic, sparsely fossiliferous, soft, moderately weathered, fine-grained, thin bedding, vuggy, Ft. Thompson Formation, 2.5Y 8/2 pale yellow           | 81   | 1             | RQD<br>20           | 4 x 5-1/2" Diamond Impregnated Bit<br>DT = 1 mins<br>HP = 250 psi<br>DFR = 50 % |                   |         |
| -5.5   | 23.0  |        | LIMESTONE, hard, moderately weathered, fine-grained, thick bedding, pitted, 5Y 8/1 white<br>At El. -4.0 Ft., 5Y 7/3 pale yellow                                   | 100  | 2             | RQD<br>85           | 4 x 5-1/2" Diamond Impregnated Bit<br>DT = 4 mins<br>HP = 250 psi<br>DFR = 25 % |                   |         |
| -12.5  | 30.0  |        | LIMESTONE, fossiliferous, moderately hard, slightly weathered, aphanitic, thick bedding, vuggy, 5Y 8/2 pale yellow<br>At El. -9.5 Ft., thin bedding, 5Y 8/1 white | 60   | 3             | RQD<br>10           | 4 x 5-1/2" Diamond Impregnated Bit<br>DT = 3 mins<br>HP = 250 psi<br>DFR = 0 %  |                   |         |
| -14.5  | 32.0  |        | SAND, silty, soft, mostly subangular fine-grained sand-sized carbonate, strong reaction with HCl, wet, 2.5Y 8/2 pale yellow (SM)                                  |  |               |                     |   |                   |         |
|  |       |        | LIMESTONE, fossiliferous, moderately hard, moderately weathered, fine-grained, thin bedding, vuggy, 5Y 8/1 white<br>At El. -17.0 Ft., 5Y 6/4 pale olive           | 60   | 2             | RQD<br>0            | 4 x 5-1/2" Diamond Impregnated Bit<br>DT = 4 mins<br>HP = 250 psi<br>DFR = 0 %  |                   |         |

| DRILLING LOG (Cont. Sheet)                       |       |                      | INSTALLATION<br>Jacksonville District   |           |                     | SHEET 3<br>OF 7 SHEETS |  |                   |         |
|--|-------|----------------------|---|-----------|---------------------|------------------------|--|-------------------|---------|
| PROJECT<br>L-30 Seepage Management Pilot Project |       |                      | COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. Ft.)  |           | HORIZONTAL<br>NAD83 | VERTICAL<br>NAVD88     |  |                   |         |
| LOCATION COORDINATES<br>X = 823,753 Y = 522,044  |       |                      | ELEVATION TOP OF BORING<br>17.5 Ft.   |           |                     |                        |  |                   |         |
| ELEV.  | DEPTH | LEGEND               | CLASSIFICATION OF MATERIALS   | %<br>REC. | BOX OR<br>SAMPLE    | RQD<br>OR<br>UD        | REMARKS  | BLOWS/<br>0.5 FT. | N-VALUE |
|  |       | Moderately Weathered |   | 60        | 5                   | RQD<br>25              | 4 x 5-1/2" Diamond Impregnated Bit<br>DT = 3 mins<br>HP = 250 psi<br>DFR = 0 % |                   |         |
|  |       |                      | From El. -20.5 to -31.5 Ft., unweathered, aphanitic, thin bedding, pitted, 5Y 8/1 white           |           |                     |                        |  |                   |         |
|  |       |                      |   |           |                     |                        | -22.5  |                   |         |
|  |       |                      |   | 60        | 2                   | BOX RQD<br>0           | 4 x 5-1/2" Diamond Impregnated Bit<br>DT = 5 mins<br>HP = 250 psi<br>DFR = 0 % |                   |         |
|  |       |                      |   |           |                     |                        | -27.5  |                   |         |
|  |       | Unweathered          |   | 66        | 7                   | RQD<br>0               | 4 x 5-1/2" Diamond Impregnated Bit<br>DT = 5 mins<br>HP = 250 psi<br>DFR = 0 % |                   |         |
|  |       |                      | From El. -31.5 to -37.5 Ft., soft, unweathered, aphanitic, thin bedding, pitted, clay filled pits |           |                     |                        |  |                   |         |
|  |       |                      |   |           |                     |                        | -32.5  |                   |         |
|  |       | Unweathered          |   | 60        | 3                   | BOX RQD<br>25          | 4 x 5-1/2" Diamond Impregnated Bit<br>DT = 6 mins<br>HP = 250 psi<br>DFR = 0 % |                   |         |
|  |       |                      |   |           |                     |                        | -37.5  |                   |         |

| DRILLING LOG (Cont. Sheet)                       |       |                |  | INSTALLATION<br>Jacksonville District                  |                     |                     | SHEET 4<br>OF 7 SHEETS   |                    |         |
|--|-------|----------------|--|--|---------------------|---------------------|--|--------------------|---------|
| PROJECT<br>L-30 Seepage Management Pilot Project |       |                |  | COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. Ft.) |                     | HORIZONTAL<br>NAD83 |  | VERTICAL<br>NAVD88 |         |
| LOCATION COORDINATES<br>X = 823,753 Y = 522,044  |       |                |  | ELEVATION TOP OF BORING<br>17.5 Ft.                    |                     |                     |  |                    |         |
| ELEV.  | DEPTH | LEGEND         | CLASSIFICATION OF MATERIALS  | %<br>REC.  | BOX<br>OR<br>SAMPLE | RQD<br>OR<br>UD     | REMARKS  | BLOWS/<br>0.5 FT.  | N-VALUE |
|  |       | Mod. Weathered | From El. -37.5 to -39.5 Ft., moderately hard, moderately weathered, aphanitic, thin bedding, vuggy, 5Y 7/2 light gray                    |  |                     |                     |  |                    |         |
|  |       | Unweathered    | From El. -39.5 to -43.5 Ft., soft, unweathered, aphanitic, thin bedding, pitted, clay filled pits, 5Y 8/1 white                          | 25   | 9                   | RQD<br>0            | 4 x 5-1/2" Diamond Impregnated Bit<br>DT = 4 mins<br>HP = 250 psi<br>DFR = 0 % |                    |         |
|  |       |                |  |  |                     |                     | -42.5  |                    |         |
|  |       |                | From El. -43.5 to -46.0 Ft., moderately hard, moderately weathered, aphanitic, thin bedding, vuggy, sand filled vugs, 5Y 7/3 pale yellow | 20   | BOX<br>3            | RQD<br>0            | 4 x 5-1/2" Diamond Impregnated Bit<br>DT = 6 mins<br>HP = 250 psi<br>DFR = 0 % |                    |         |
|  |       |                | From El. -46.0 to -51.5 Ft., moderately weathered, aphanitic, thin bedding, pitted, clay filled pits, 10YR 7/2 light gray                |  |                     |                     | -47.5  |                    |         |
|  |       | Mod. Weathered |  | 80   | 11                  | RQD<br>8            | 4 x 5-1/2" Diamond Impregnated Bit<br>DT = 6 mins<br>HP = 250 psi<br>DFR = 0 % |                    |         |
|  |       | Unweathered    | From El. -51.5 to -55.5 Ft., unweathered, aphanitic, medium bedding, vuggy, sand filled vugs, 10YR 8/2 very pale brown                   |  |                     |                     | -52.5  |                    |         |
|  |       |                |  |  |                     |                     |  |                    |         |
|  |       | Mod. Weathered | From El. -55.5 to -57.5 Ft., moderately weathered, fine-grained, thick bedding, pitted, sand filled pits, 2.5Y 6/1 gray                  | 90   | BOX<br>4            | RQD<br>60           | 4 x 5-1/2" Diamond Impregnated Bit<br>DT = 3 mins<br>HP = 250 psi<br>DFR = 0 % |                    |         |
| -57.5  | 75.0  |                |  |  |                     |                     | -57.5  |                    |         |

| DRILLING LOG (Cont. Sheet)            |       |   | INSTALLATION  |        |               | SHEET 5   |  |               |         |
|---------------------------------------|-------|---|---|--------|---------------|-----------|--|---------------|---------|
| PROJECT                               |       |   | COORDINATE SYSTEM/DATUM   |        | HORIZONTAL    | VERTICAL  |  |               |         |
| L-30 Seepage Management Pilot Project |       |   | State Plane, FLE (U.S. Ft.)   |        | NAD83         | NAVD88    |  |               |         |
| LOCATION COORDINATES                  |       |   | ELEVATION TOP OF BORING   |        |               |           |  |               |         |
| X = 823,753 Y = 522,044               |       |   | 17.5 Ft.  |        |               |           |  |               |         |
| ELEV.                                 | DEPTH | LEGEND  | CLASSIFICATION OF MATERIALS   | % REC. | BOX OR SAMPLE | RQD OR UD | REMARKS  | BLOWS/0.5 FT. | N-VALUE |
| -61.5                                 | 79.0  | Slightly Weathered  | LIMESTONE, soft, slightly weathered, aphanitic, 5Y 7/3 pale yellow  | 0      | BOX           | RQD       | 4 x 5-1/2" Diamond Impregnated Bit<br>DT = 2 mins<br>HP = 250 psi<br>DFR = 0 % |               | 75      |
| -62.5                                 | 80.0  |   | LIMESTONE, fossiliferous, soft, slightly weathered, aphanitic, pitted, sand filled pits, 5Y 7/3 pale yellow | 20     | 14            |           | SPT Sampler  | WOR<br>0      | 0       |
|                                       |       | SHELL, mostly angular coarse-grained sand-sized shell up to 1/2", little clay, strong reaction with HCl, wet, Pinecrest Sand Formation, 2.5Y 7/1 light gray                               |   | 40     | 15            |           | SPT Sampler  | 7<br>12       | 23      |
|                                       |       |   |   | 97     | 16            |           | SPT Sampler  | 7<br>14       | 28      |
|                                       |       |   |   | 73     | 17            |           | SPT Sampler  | 8<br>17       | 33      |
|                                       |       |   |   | 100    | 18            |           | SPT Sampler  | 7<br>8        | 16      |
|                                       |       |   |   | 50     | 19            |           | SPT Sampler  | 12<br>14      | 29      |
|                                       |       |   |   | 77     | 20            |           | SPT Sampler  | 12<br>14      | 26      |
|                                       |       |   |   | 90     | 21            |           | SPT Sampler  | 14<br>8       | 18      |
|                                       |       |   |   | 90     | 22            |           | SPT Sampler  | 10<br>8       | 15      |
|                                       |       |   |   | 90     | 23            |           | SPT Sampler  | 7<br>7        | 14      |
|                                       |       |   |   | 90     | 24            |           | SPT Sampler  | 6<br>5        |         |
| -68.5                                 | 86.0  | SAND, clayey, nonplastic, soft, mostly fine-grained sand-sized carbonate, little clay, strong reaction with HCl, wet, 2.5Y 7/1 light gray (SC)  |   |        |               |           |  |               |         |
| -70.0                                 | 87.5  |   |   |        |               |           |  |               |         |
|                                       |       | SHELL, mostly angular coarse-grained sand-sized shell up to 1/4", some coarse-grained sand-sized limestone up to 1/2", little clay, strong reaction with HCl, wet, 2.5Y 6/1 gray          |   |        |               |           |  |               |         |
|                                       |       |   |   |        |               |           |  |               |         |
|                                       |       | At El. -73.5 Ft., nonplastic, mostly angular medium-grained sand-sized shell up to 1/4", little fine to medium-grained sand-sized carbonate, strong reaction with HCl, wet, 2.5Y 6/1 gray |   |        |               |           |  |               |         |
|                                       |       |   |   |        |               |           |  |               |         |
|                                       |       | CLAY, lean, medium plasticity, soft, mostly clay, some shell up to 1/4", little fine-grained sand-sized carbonate, strong reaction with HCl, wet, 2.5Y 5/1 gray (CL)                      |   |        |               |           |  |               |         |
|                                       |       |   |   |        |               |           |  |               |         |
|                                       |       | At El. -76.5 Ft., some fine-grained sand-sized quartz, little coarse-grained sand-sized shell, strong reaction with HCl,  |   |        |               |           |  |               |         |
|                                       |       |   |   |        |               |           |  |               |         |



| DRILLING LOG (Cont. Sheet)            |       |        | INSTALLATION  |        |               | SHEET 6<br>OF 7 SHEETS |  |                   |         |
|---------------------------------------|-------|--------|---|--------|---------------|------------------------|--|-------------------|---------|
| PROJECT                               |       |        | COORDINATE SYSTEM/DATUM   |        | HORIZONTAL    | VERTICAL               |  |                   |         |
| L-30 Seepage Management Pilot Project |       |        | State Plane, FLE (U.S. Ft.)   |        | NAD83         | NAVD88                 |  |                   |         |
| LOCATION COORDINATES                  |       |        | ELEVATION TOP OF BORING   |        |               |                        |  |                   |         |
| X = 823,753 Y = 522,044               |       |        | 17.5 Ft.  |        |               |                        |  |                   |         |
| ELEV.                                 | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS   | % REC. | BOX OR SAMPLE | ROD OR UD              | REMARKS  | BLOWS/<br>0.5 FT. | N-VALUE |
| -78.5                                 | 96.0  |        | wet, 10Y 6/1 greenish gray  | 90     | 24            |                        | -78.0 SPT Sampler  | 5                 | 10      |
|                                       |       |        |   |        |               |                        |  | 15                |         |
|                                       |       |        | SAND, silty, very soft, mostly fine-grained sand-sized quartz, little silt, little coarse-grained sand-sized shell up to 1/4", strong reaction with HCl, wet, 10Y 7/1 light greenish gray (SM)                                    | 67     | 25            |                        | -79.5 SPT Sampler  | 15                | 23      |
|                                       |       |        |   |        |               |                        |  | 8                 |         |
| -81.0                                 | 98.5  |        |   | 47     | 26            |                        | -81.0 SPT Sampler  | 7                 | 28      |
|                                       |       |        |   |        |               |                        |  | 14                |         |
|                                       |       |        | SHELL, mostly angular fine to coarse gravel-sized shell up to 3/4", little fine-grained sand-sized quartz, little sand to gravel-sized limestone up to 1/2", few silt, strong reaction with HCl, wet, 10Y 7/1 light greenish gray | 90     | 27            |                        | -82.5 SPT Sampler  | 7                 | 35      |
|                                       |       |        | At El. -82.5 Ft., few fine-grained sand-sized quartz  |        |               |                        |  | 14                |         |
|                                       |       |        |   | 90     | 28            |                        | -84.0 SPT Sampler  | 21                | 100     |
|                                       |       |        |   |        |               |                        |  | 22                |         |
|                                       |       |        |   |        |               |                        |  | 23                | 44      |
|                                       |       |        |   |        |               |                        |  | 21                |         |
|                                       |       |        |   | 90     | 29            |                        | -85.5 SPT Sampler  | 12                | 20      |
|                                       |       |        | At El. -85.0 Ft., some fine to medium-grained sand-sized quartz, trace sand to gravel-sized shell up to 3/4"  |        |               |                        |  | 11                |         |
|                                       |       |        |   |        |               |                        |  | 9                 |         |
| -87.5                                 | 105.0 |        |   | 90     | 30            |                        | -87.0 SPT Sampler  | 5                 | 20      |
|                                       |       |        |   |        |               |                        |  | 10                |         |
|                                       |       |        |   |        |               |                        |  | 10                |         |
|                                       |       |        | SAND, silty, some fine-grained sand-sized quartz, little fine-grained sand-sized carbonate, little sand to gravel-sized shell up to 1/2", strong reaction with HCl, wet, 10Y 6/1 greenish gray (SM)                               | 90     | 31            |                        | -88.5 SPT Sampler  | 17                | 105     |
|                                       |       |        | At El. -88.5 Ft., few coarse-grained sand-sized limestone up to 1/4"  |        |               |                        |  | 23                | 65      |
|                                       |       |        |   |        |               |                        |  | 42                |         |
|                                       |       |        |   | 90     | 32            |                        | -90.0 SPT Sampler  | 27                | 74      |
|                                       |       |        |   |        |               |                        |  | 37                |         |
| -91.4                                 | 108.8 |        |   | 97     | 33            |                        | -91.5 SPT Sampler  | 14                | 71      |
|                                       |       |        |   |        |               |                        |  | 34                |         |
|                                       |       |        |   |        |               |                        |  | 37                |         |
|                                       |       |        | LIMESTONE, fossiliferous, moderately hard, coarse-grained, pitted, clay filled pits, 10Y 6/1 greenish gray  |        |               |                        | 140# hammer w/30" drop used with 2.0' split spoon (1-3/8" I.D. x 2" O.D.). |                   | 110     |
|                                       |       |        | NOTES:  |        |               |                        | Abbreviations:   |                   |         |
|                                       |       |        | 1. Soils are field visually classified in accordance with the Unified Soils Classification System.  |        |               |                        | WOR = Weight of Rods.  |                   |         |
|                                       |       |        | 2. Set 17.5 Ft. of 8" Schedule 40 PVC Pipe Through Center of L-30 Levee To Top of Rock.   |        |               |                        | DT = Drill Time.   |                   |         |
|                                       |       |        | 3. Boring Drilled/Sampled In Three Phases:  |        |               |                        | HP = Hydraulic Pressure.   |                   |         |
|                                       |       |        | A. Set Surface Casing.  |        |               |                        | DFR = Drill Fluid Return.  |                   |         |
|                                       |       |        | B. 4" Wireline Rock Coring To Base Of Rock.   |        |               |                        |  |                   |         |
|                                       |       |        | C. Splitspoon Sampling 30 Ft. Below Base of Rock.   |        |               |                        |  |                   |         |

| DRILLING LOG (Cont. Sheet)                       |       |        | INSTALLATION  |           |                     | SHEET 7<br>OF 7 SHEETS |         |                   |         |
|--|-------|--------|---|-----------|---------------------|------------------------|---------|-------------------|---------|
| PROJECT<br>L-30 Seepage Management Pilot Project |       |        | COORDINATE SYSTEM/DATUM<br>State Plane, FLE (U.S. Ft.)  |           | HORIZONTAL<br>NAD83 | VERTICAL<br>NAVD88     |         |                   |         |
| LOCATION COORDINATES<br>X = 823,753 Y = 522,044  |       |        | ELEVATION TOP OF BORING<br>17.5 Ft.   |           |                     |                        |         |                   |         |
| ELEV.  | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS   | %<br>REC. | BOX OR<br>SAMPLE    | RQD<br>OR<br>UD        | REMARKS | BLOWS/<br>0.5 FT. | N-VALUE |
|  |       |        | 4. Borehole Reamed To 7.5" To Base of Rock. USGS Performed Borehole Logging.<br><br>5. 2" Monitoring Well Set @<br>X = 823754 Y= 522036<br><br>Screen From -40.7 to -42.7 Ft.<br><br>6. Cored to 80 Ft. To Confirm Out of Rock<br><br>7. Boring sealed with available sediment. |           |                     |                        |         |                   |         |

L-30 SEEPAGE MGMT PILOT PG1  
CP06-L30PP-CB-0002  
DEPTH: 17.3-20.0  
S- Run #1



L-30 SEEPAGE MGMT PILOT PGT  
CP06-L30PP-CB-000 2  
DEPTH: 20.0-25.0'  
S-Run # 2



L-30 SEEPAGE MGMT PILOT PGT  
CP06-L30PP-CB-0002  
DEPTH: 25.0-30.0'  
S-Run #3



L-30 SEEPAGE MGMT PILOT PGT  
CP06-L30PP-CB-0002  
DEPTH: 30.0-35.0'  
S- Run # 4



L-30 SEEPAGE MGMT PILOT PGT  
CP06-L30PP-CB-0002  
DEPTH: 35.0 - 40.0  
S- Run #5



L-30 SEEPAGE MGMT PILOT PGT  
CP06-L30PP-CB-0002  
DEPTH: 40.0-45.0'  
S- Run#6



L-30 SEEPAGE MGMT PILOT PGT  
CP06-L30PP-CB-0002  
DEPTH: 45.0-50.0'  
S-RUN #7



L-30 SEEPAGE MGMT PILOT PGT  
CP06-L30PP-CB-0002  
DEPTH: 50.0-55.0'  
S- Run # 8



L-30 SEEPAGE MGMT PILOT PGT  
CP06-L30PP-CB-0002  
DEPTH: 55.0-60.0'  
S-Run #9



L-30 SEEPAGE MGMT PILOT PGT  
CP06-L30PP-CB-0002  
DEPTH: 60.0-65.0  
S-Run # 10



L-30 SEEPAGE MGMT PILOT PGT  
CP06-L30PP-CB-0002  
DEPTH: 65-70.0'  
S-Run # 11



L-30 SEEPAGE MGMT PILOT PGT  
CP06-L30PP-CB-0002  
DEPTH: 70.0-75.0'  
S-Run# 12



WIPER  
BUCKER  
60  
BAGS  
33 GALLONS

**L-30 SEEPAGE MGMT PILOT PGT**  
**CP06-L30PP-CB-000 2**  
**DEPTH: 79.0-80.5'**  
**S-14**

L-30 SEEPAGE MGMT PILOT PGT  
CP06-L30PP-CB-000 2  
DEPTH: 80.5-82.0'  
S-15





L-30 SEEPAGE MGMT PILOT PGT  
CP06-L30PP-CB-000 2  
DEPTH: 82.0-83.5'  
S-16

L-30 SEEPAGE MGMT PILOT PGT  
CP06-L30PP-CB-000 2  
DEPTH: 03.5-85.0'  
S-17





L-30 SEEPAGE MGMT PILOT PGT  
CP06-L30PP-CB-000 2  
DEPTH: 85.0-86.5  
S-18



L-30 SEEPAGE MGMT PILOT PGT  
CP06-L30PP-CB-000 2  
DEPTH: 86.5-88.0'  
S-19



L-30 SEEPAGE MGMT PILOT PGT  
CP06-L30PP-CB-000 2  
DEPTH: 88.0-89.5  
S-20

60  
BARS  
35 GAL/HR

L-30 SEEPAGE MGMT PILOT PGT  
CP06-L30PP-CB-000 2  
DEPTH: 89.5-91.0'  
S-21

6000



L-30 SEEPAGE MGMT PILOT PGT  
CP06-L30PP-CB-000 2  
DEPTH: 91.0-92.5'  
S-22



L-30 SEEPAGE MGMT PILOT PGT  
CP06-L30PP-CB-000 2  
DEPTH: 92.5-94.0'  
S-23





L-30 SEEPAGE MGMT PILOT PGT  
CP06-L30PP-CB-000 2  
DEPTH: 94.0-95.5'  
S - 24





L-30 SEEPAGE MGMT PILOT PGT  
CP06-L30PP-CB-000 2  
DEPTH: 95.5-97.0  
S- 25





L-30 SEEPAGE MGMT PILOT PGT  
CP06-L30PP-CB-000 2  
DEPTH: 97.0-98.5'  
S- 26



L-30 SEEPAGE MGMT PILOT PGT  
CP06-L30PP-CB-000 2  
DEPTH: 98.5-100.0'  
S- 27





L-30 SEEPAGE MGMT PILOT PGT  
CP06-L30PP-CB-000 2  
DEPTH: 101.5-103.0'  
S- 28





L-30 SEEPAGE MGMT PILOT PGT  
CP06-L30PP-CB-000 2  
DEPTH: 101.5-103.0'  
S- 29





L-30 SEEPAGE MGMT PILOT PGT  
CP06-L30PP-CB-000 2  
DEPTH: 1030-104.5  
S- 30





L-30 SEEPAGE MGMT PILOT PGT  
CP06-L30PP-CB-000 2  
DEPTH: 104.5-106.0'  
S-31



EXPO

L-30 SEEPAGE MGMT PILOT PGT  
CP06-L30PP-CB-000 2  
DEPTH: 106.0-107.5  
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L-30 SEEPAGE MGMT PILOT PGT  
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